



**The Experience of Friendship and Bullying in Children with an Autism Spectrum
Disorder**

Emma Rowley

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University College London

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OVERVIEW

This thesis sets out to investigate and explore the friendship and bullying experiences of children with an autism spectrum disorder. Part one comprises a review of published studies looking at the quality of social interactions, as well as the experience of friendship, bullying and loneliness in children with an autism spectrum disorder, in order to gain a more detailed understanding of their everyday social experience.

Following on from the literature review, part two of the thesis describes a quantitative study to explore the friendship and bullying experiences of a group of children with an autism spectrum disorder. The study initially focuses upon identifying the child-specific factors, such as IQ and autistic symptomatology, which may increase, or conversely protect against, the risk of difficulties in the formation and maintenance of school-based peer friendships, as well as in bullying and peer victimisation. The study then examines the differences between the level of friendship difficulties and bullying experienced by children attending mainstream school, and those in special educational needs schools.

Finally, part three is a critical appraisal of the empirical study. This piece begins with a discussion of the background to the research, before considering methodological issues which arose during the planning and implementation of the study, and the process of developing a child friendship and bullying measure. The appraisal ends with a review of the study findings, the implications for future work with this group of children, and directions for future research.

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Part 1: Literature Review

What is the Quality of Peer Relationships in Children with an Autism Spectrum Disorder?

ABSTRACT

Social interaction and communication are known to be major areas of difficulty for children with an autism spectrum disorder, however, little is known about how these difficulties impact upon their ability to form meaningful peer relationships and friendships. The present article reviews the increasing body of literature on the quality of peer relationships in this population of children. The small number of published papers employ a range of different methodologies, with most showing that, compared to typically developing children, children with autism interact with their peers less frequently, and have fewer close friendships. Moreover, there is growing evidence to suggest that, as a result of their peer relationship difficulties, these children experience greater feelings of loneliness, and are at greater risk of victimization and bullying by their peers. Since many of the studies included in this review have small sample sizes and methodological weaknesses, further good quality research is needed to promote our understanding of the peer relationships, and in particular the emotional impact of these difficulties on children and young people with an autism spectrum disorder.

INTRODUCTION

Peer relationships are a significant social experience for children and adolescents, providing them with a context within which to develop and practice fundamental prosocial behaviours, including mutual caring, companionship, and empathy. It is through these relationships that the child has the opportunity to develop the ability to compromise, the capacity to understand and to develop efficient strategies for conflict resolution (Asher, Parker & Walker, 1996).

In middle childhood, peer relationships provide a context for building trust and experiencing intimacy through sharing feelings and experiences with same-age peers (Parker and Gottman, 1989), whilst also providing the child with a sense of belonging and self-worth (Bagwell, Newcomb & Bukowski, 1998). Moreover, having a friend serves as an important source of emotional support and protection from loneliness and social rejection. Research shows that friendship is an important mediator of social adjustment, with a lack of friends being associated with later adjustment problems (e.g. Burgess, Wojslawowicz, Rubin, Rose-Krasnor & Booth-LaForce, 2006; Parker and Gottman. 1989; Parker, Rubin, Price & DeRosier, 1995).

The research literature suggests that, unlike most typically developing children, children with autism may have limited experience with their peers, and may also be less able to understand the meaning of friendship. Indeed, one of the central diagnostic criteria for autism spectrum disorders is a failure to develop peer relationships appropriate to the child's developmental level (DSM-IV-TR; American Psychiatric Association, 2000). Despite this, children with autism frequently report feelings of loneliness and negative affect arising from unsatisfactory social relationships and diminished friendships. Such negative social outcomes can have considerable, negative consequences for the child, in some cases leading

to the experience of depression and social withdrawal (Sandstrom & Zakriski, 2004; Seepersad, 2006).

Given the important role of friendship and peer relationships in helping the individual to develop key prosocial, cognitive and emotional skills, as well as in protecting against depression and social isolation both during childhood and in later life, it seems particularly important to bring together what is known about the quality of social relationships in children with autism spectrum disorders, whom we know to be at a neurobiological disadvantage in terms of their reciprocal social relations, verbal and nonverbal communication. In this way, it is hoped that we can further our understanding of the challenges and difficulties faced by this group of children, and develop appropriate ways of addressing their social and emotional needs in the future.

The present article reviews the available research literature in order to answer the question: ‘What is the quality of peer relationships in children and adolescents with an Autism Spectrum Disorder?’ The review is organized around three areas of social functioning: social interaction and peer relationships, close friendship relationships and finally peer relationship difficulties and loneliness. The literature presented within each area is grouped according to the different research methodologies used. These include real-time observational studies, single case-study designs, child and parent report, as well as multi-informant approaches, using a combination of observation, child and parent report.

Literature search method

A computer search of Ovid Online including PsychLit, ISA Web of Science and ISA Web of Knowledge up to the year 2008 was conducted using the search terms: “autism”, “autistic”, “Asperger”, combined with the following terms: 1) peer, peers peer rel* (where * allows for the inclusion of different forms of the term e.g. peer relations, peer relationships etc.),

social, social rel*; 2) friend* (where * allows for the inclusion of different forms of the term e.g. friendship, friends etc.); and 3) peer relationship difficulties, social relationship difficulties, conflict, arguments, lonely, loneliness, exclusion, isolation, victimization, bullying and teasing. The titles and abstracts generated by the search engines were screened for the inclusion criteria listed below. If an abstract was not available or did not contain adequate information, the full article was screened. Relevant journal articles cited in book chapters and article references were also screened.

Peer relationship studies, including those addressing friendship, peer relationship difficulties and loneliness, were included if they met the following criteria 1) Peer reviewed article published in English language up to 2008, 2) child and adolescent sample aged between 7 and 18 years and 3) children with diagnosed autism, autistic spectrum disorder or Asperger's syndrome. Both large and small-N studies were included in the review, with the largest study involving 411 children, and the smallest being a single case-study design. Studies describing interventions aimed at improving the social interaction and peer relationships of children with autism were excluded from the present review.

A detailed search of the literature indicated that some areas of the peer relationships of children with an autism spectrum disorder were given more research attention than others (e.g. friendship), whilst a large proportion of studies across all aspects of peer relationships were excluded, since their focus was on describing specific interventions rather than seeking to explore children's current relationship skills. A summary of relevant articles is presented below for each of the selected areas of peer relationships.

Social Interaction and Peer Relationships

This section includes studies investigating the nature of social interactions between children and young people with an Autism Spectrum Disorder and their peers. A search of the peer

relationship literature yielded only seven studies which met the inclusion criteria, five of which were small-N (under 60 participants), and two with a group size of over 200. A number of different research methodologies were employed, including three studies using real-time observation of children, one using child interview, one parent report study and two final studies using a multi-informant (child and parent report) design.

Observational studies

The first study, conducted by Hauck, Fein, Waterhouse and Feinstein (1995) compared the social initiations of 18 children with autism with those of 13 children with learning disabilities, during classroom-based free play and lunchtime play periods at school. The children were all aged between seven and fourteen years, and had been matched for verbal ability. Children's social initiations were recorded according to a coding scheme which allowed for real-time coding of behaviour in the classroom in four fifteen-minute periods. Initiations were then combined into larger categories reflecting positive, negative, low-level, attention-seeking and avoidant interactions.

The authors found a large amount of variance within both groups, allowing only three significant comparisons to be made: positive initiations to other children, negative initiations to other children, and total initiations to other children. Nevertheless, frequency of social initiations to peers differed greatly between the two groups, with children with autism making only about one third as many initiations to their peers as did verbally matched children with learning disabilities. In addition, initiations differed in quality between the two groups, with children with autism tending to engage in more routinized interactions which included information-giving and greeting, whilst the children within the comparison group demonstrated more flexible reciprocal interaction, such as seeking information and initiating play. Interestingly, whilst scores on socialization were found to account for a

major part of the between-group difference, within the autism group, the frequency of social initiation to peers was predicted by cognitive level rather than autism symptom severity.

This observational study (Hauck et al., 1995), had the advantage of allowing the researchers involved to directly observe typical interactions between individual children and their peers, at different points during the school day. Moreover, the two groups used in the study were well matched on both chronological and developmental age, allowing for more direct comparisons of social behaviour to be made between the autism group and those with learning disabilities. Despite this, the sample sizes in both groups were small, and the study findings indicated a large amount of variance in the behaviours observed in both groups. Furthermore, it is possible that children's social initiations were, to some extent, constrained by the availability of verbally matched peers within their classroom during the observation periods. Replication of these results, using larger group sizes, and with longer periods of observation, would increase the probability of observing a greater number of specific initiations and social behaviours, allowing for more detailed comparisons to be made between the two groups.

In a later study, Jackson et al., (2003), examined the responses and sustained interactions of nineteen children with autism, compared with a group of fourteen verbal-age matched children with learning disabilities between the ages of seven and fourteen years, recruited from special education classes and schools. Classroom observations were performed in two to four 15-minute periods during lunch and free play sessions, when the children were most likely to be observed in group interactions with familiar peers.

As in the Hauck et al., (1995) study, a behavioural coding system was used to code children's initiations, responses to others' initiations, and sustained interactions. The type of initiation was also recorded. 'Positive responses' to social bids included compliance, co-operation, and other pro-social responses. 'Negative responses' included

non-compliance, aggression, avoiding or escaping, and distress. 'Other responses' included looking, echoing, imitating, moving in and out of proximity and using sign language or other types of verbalization. Interactions were considered to be sustained whenever the observed child made at least two responses to another child in a series of related behaviours.

This study sought to build upon the previous Hauck et al., (1995) study, by examining both language interactions and play as a vehicle for social interaction. The authors also explored the frequency and quality of sustained interactions, in addition to the simple interactions explored in previous research. The findings indicated that, in general, children with autism produced fewer positive responses, and were coded as making 'no response' more frequently than children with learning disabilities. Furthermore, the number of sustained play interactions was found to be significantly different for the two groups, with only 39 percent ($n=7$) of the children with autism engaging in at least one play interaction, compared to 82 percent ($n=9$) of the learning disabilities sample. The data also revealed a non-significant trend in which the interactions of the autism group tended to be of shorter duration than those of the learning disabilities group. Both groups were found to give more positive responses to adults, whilst tending not to respond to initiations made by peers.

Both of these observational studies suggest that children with autism experience significant difficulties in their social interactions with peers, initiating and responding to social bids less frequently than children with a similar level of receptive and expressive language. However, the small and uneven group sizes used, mean that the differences found may not have great ecological validity. For example, Jackson et al., (2003) reported a large and significant difference between groups, in terms of the number of children engaging in sustained play interactions, however the data indicates that this finding is based upon a difference of just

two children. Replication of these studies using larger sample sizes is needed to corroborate these results.

A more recent study (Bauminger, Shulman & Agam, 2003), used observation as well as child report methods to examine peer interaction in high-functioning children with autism. In the study, a group of eighteen children and adolescents between the ages of 8 and 17, with a pre-existing diagnosis of high-functioning autism, were IQ matched with a group of seventeen typically developing young people between 8 and 16 years old. All but one of the children in the autism sample were attending mainstream schools.

To assess children's spontaneous social interaction, each child was observed for one hour during their school break and snack times, and their social initiations coded along three global social interaction scales. In addition, children's understanding of peer interaction was assessed using a picture recognition task. Finally, each child was given a questionnaire and asked questions aimed at examining their understanding of the emotional aspect of loneliness.

As predicted, the authors found that children with high-functioning autism showed a lower level of participation in peer interaction, initiating and responding to peers at about half the rate of typical controls (Bauminger et al., 2003). In addition, they observed that, whilst the distribution of social interaction behaviours was the same for both groups: the majority of behaviours being positive (for example, eye contact, sharing and social communication), the quality of social interaction was different, with children in the autism group experiencing difficulties with a large proportion of the more complex, communicative and social behaviours, (for example, sharing and eye-contact with a smile). As such, functional communications were more likely to be used by this group than by typically developing children, suggesting that they may find instrumental interactions easier than unstructured

social engagement with peers.

Whilst this clearly highlights an area of impairment within this group, the children in this study were observed to be much more socially active with peers than in previous research (e.g. Hauck et al., 1995), including during unstructured outdoor break-times, one of the most challenging social frameworks for these children. Moreover, there was a relatively high rate of social initiations made by children with high-functioning autism: the results showed that, for three out of ten positive and low-level social behaviours, such as eye contact and looking, children with autism both initiated and responded to a similar degree. Furthermore, for five out of the ten behaviours, including sharing, talking to express interest in another child and close proximity, children with autism initiated even more than they responded. The authors suggest that this finding may support the fact that high-functioning children are socially expressive, and are indeed motivated to interact with their peers.

Child Report Studies

Chamberlain, Kasari and Rotheram-Fuller (2007), used a child report design to explore the social networks of children with autism. In their study, the authors sought to examine how children with autism negotiated the social environments of mainstream school classrooms. They looked specifically at the degree to which these children were included in their peers' social networks, how they compared with their peers on measures of social network involvement, and how their social network involvement related to other measures of friendship and peer relationships.

Participants were 398 children in mainstream school, including seventeen children with confirmed diagnoses of high-functioning autism or Asperger's syndrome. All of the children within the high-functioning autism group had an IQ within the normal range.

Social network data was collected from all 381 non-ASD peers from the classrooms of the seventeen children with autism spectrum disorders, of whom 249 also provided self-report data and network nominations. Moreover, in order to compare children with ASD to their peers without autism, social network and sociometric data was collected on a subgroup of seventeen peers matched to those within the ASD group.

The measures used allowed children to nominate their 'top three' friends, as well as give social network information representing their perceptions of the social environment of the classroom as a whole, enabling children's 'Social Network Centrality' scores to be calculated. Children also completed the Asher Loneliness Scale (Asher, Hymel & Renshaw, 1984), a self-report measure consisting of twenty-four statements around loneliness and peer relationships.

The authors found that the involvement of children with autism in the social structures of regular classrooms revealed a mixed picture. Whilst the children with autism generally managed to avoid social isolation, with some being centrally involved and enjoying considerable reciprocity, others were found to have only a few weak ties and no reciprocal friendships. In some classes, the child with autism was connected to the social structure by a single link with a popular child.

Overall, the average level of social network centrality was lower for children with autism than for their peers. Furthermore, the data suggested that they were less well accepted and had fewer reciprocal friendships among their 'top three' and best friend nominations. Despite this, the children with autism reported levels of closeness, security, and conflict similar to their peers, as well as reporting similar levels of loneliness, regardless of their level of social involvement. The authors suggest that children with autism may show less sensitivity to their own lack of involvement, instead experiencing a degree of 'happy

obliviousness' regarding their social status.

Whilst providing an interesting way of gaining information about the popularity and centrality of children with autism within mainstream school classrooms, the novel methodology of this study means that it is difficult to make any direct comparisons with other research in the area. Moreover, the approach used does not address the specific reasons why some children seem to have more successful relationships than others. Further work is needed to determine whether the lack of centrality seen in this group of children can be attributed to autism-specific symptomatology, or whether there may in fact be a range of mediating variables, such as IQ and language level, which have an important role to play in peer acceptance and friendship.

Parent Report Studies

Peer relationships were investigated in a parent-report study conducted by Orsmond, Krauss and Seltzer (2004), which looked at the prevalence of having friendships, peer relationships, and participating in social and recreational activities amongst a group of 235 young people with autism, who were living at home. The authors used maternal report measures including peer relationship information from the ADI-R (Lord, Rutter & LeCouteur, 1994), to identify both individual and environmental factors predictive of peer relationships, as well as questions aimed at identifying the social and recreational activities of young people with autism.

In terms of peer relationships, the study examined four different levels of relationship, including having a same aged friend with whom varied, mutually responsive, and reciprocal activities were engaged in outside of organised settings, of which only nineteen individuals

(8%) of the sample had at least one friendship that met these criteria. A further 21% were reported to have at least one peer relationship that involved some activities outside of a prearranged setting, whilst 24% had peer relationships only within prearranged settings. Importantly, almost half of the sample were reported to have no peer relationships that met any of the criteria, indicating that, according to parent report, they had no same aged friends with whom they had a reciprocal relationship, either within or outside of prearranged settings.

The authors found that individual characteristics such as age group and impairment in social interaction skills were shown to be predictive of having peer relationships. Younger rather than older adolescents, and those with less impairment in social interaction skills were more likely to have peer relationships. None of the environmental factors examined, such as the number of services received or inclusion with non-disabled peers at school was a significant predictor of having peer relationships.

Child & Parent Report Studies

In Koning and Magill-Evans' (2001) study, peer relationships and social perception were investigated from multiple perspectives using a number of standardized measures. Twenty-one boys aged from twelve to fifteen years, who met DSM-IV criteria for Asperger syndrome were matched on age and verbal IQ with a group of 21 boys without known social skill or peer relationship difficulties, from local schools. Each child completed the Child and Adolescent Social Perception measure (CASP, Magill-Evans, Koning, Cameron-Sadava & Manyk, 1995), as well as the Social Skills Rating System (SSRS, Gresham and Elliot, 1990), a multi-rater questionnaire which was also completed by each child's parent and teacher. Finally, parents completed the Social Competence Scale of the Child Behaviour Checklist

(CBCL, Achenbach, 1991) which asked about number of friends, frequency of contact and the child's behaviour with others.

The authors' results highlighted the marked disparity between this group and the comparison group in terms of social skills and social perception scores. Nineteen of the boys with Asperger syndrome scored more than one standard deviation below the mean on the emotion score of the CASP, compared with only two boys from the comparison group. Similarly, fifteen scored more than one standard deviation below the mean on the non-verbal cues score, compared with only two in the comparison group. Both groups made frequent use of facial cues to infer emotional states; however adolescents in the Asperger syndrome group showed far less use of voice, body and situational cues than the comparison group. The authors suggest that the reliance on facial cues seen in the Asperger's group may make it very difficult to understand more complex interactions, such as those involving sarcasm.

Significant differences were also found between groups in terms of SSRS self-ratings. Scores for the comparison group were within one standard deviation of the mean, indicating that they were fairly typical adolescents in terms of social skills, whereas average group scores for the Asperger's group were around one standard deviation below the mean. Individual subtest scores for empathy, self-control, cooperation and assertiveness revealed that adolescent boys with Asperger syndrome were most aware of their differences in assertiveness, which included behaviours such as asking for information, responding to the actions of others, and meeting new people. This was corroborated by both parents and teachers, who scored the assertiveness of adolescents in this group lower than those in the comparison group.

Koning and Magill-Evans (2001) found that 16 of the 21 young people in their Asperger syndrome group reported having virtually no friends. They suggest that this situation can be explained not only in terms of the characteristic social difficulties which these adolescents experience, but also as a result of the greater emphasis placed on social skills during this life stage, which would seem to immediately place this group at a disadvantage. The authors also question whether varying levels of motivation may play a role in the low number of friendships reported by this group, although this is not substantiated by the rest of the literature (e.g. Bauminger et al., 2003).

Whilst this study has the advantage of being one of the few which provides information from multiple perspectives, its major methodological weakness is the significant difference between groups in terms of receptive language ability. This could suggest that the social skills differences identified between the two groups, could be confounded by the restricted language and general cognitive skills of the Asperger's group. Indeed, the authors found correlations between receptive language scores and parent social skills rating scores, the young person's self-rating SSRS score and the social perception non-verbal cues score. Although the large differences between groups on the social measures cannot be fully explained by differences in the adolescents' receptive language ability, future studies in this area should ensure that participants are well matched across groups, not only in terms of language skills, but also for general cognitive ability.

Knott, Dunlop and Mackay (2006) used both child and parent report measures to investigate social interaction skills and peer relationships in 19 young people with high-functioning autism (mean age 14 years 2 months). Young people, including seventeen boys and two girls, and their parents, completed two structured questionnaires, including the Spence Social Skills Questionnaire (Spence, 1995) and the Social Competence with Peers

Questionnaire (Spence, 1995). In addition, parents were asked to identify three key social skills representing a particular difficulty for their child, and to detail the specific aspects of these skills which were of concern.

The authors' findings demonstrate that children and young people with autism spectrum disorders recognise that they have significant difficulties with social skills. Analysis of the data obtained from the social skills questionnaire revealed that children scored themselves more than one standard deviation below the population mean for typically developing children. Parents' scores indicated that they perceived their children as having somewhat lower levels of social skill, although they showed close agreement on the kinds of areas in which their children displayed relative weakness. For example, both children and their parents noted problems in areas relating to temper management and assertiveness (see also Koning & Magill-Evans, 2001), as well as those relating to social engagement.

Knott et al.'s (2006) findings indicated that parents gave their children lower scores on measures of social competence than the children scored themselves. Once again, compared with population norms provided by Spence (1995), most parents gave their children scores that were two or more standard deviations below the mean, whilst the majority of children's scores were only one standard deviation below the mean. Examination of individual items showed that fifteen of the nineteen children had reported having one close friend, whilst only eleven parents reported that their child had a close friend "at least sometimes". Similarly, children generally reported finding it easier to make friends, and seeing friends outside of school more often than could be corroborated by their parents.

Regarding the key social skills with which parents felt that their child seemed to struggle,

three main themes emerged. Concerns were raised around children's ability to initiate and maintain conversation appropriately, building peer relationships in which they mixed skills and shared interests, and socio-emotional reciprocity, in which they were required to modulate their behaviour according to the specific context.

Despite friendships frequently being described as problematic, a greater number of the children and young people in this sample reported having friends than those in Koning and Magill-Evans's (2001) adolescent sample. The authors suggest that this difference highlights the different skills and expectations associated with the development of friendship in middle childhood, which tend to be based more on shared norms, conversation and games, in contrast to the more sophisticated socio-emotional skills necessary to sustain friendship in adolescence.

Summary

The literature on peer relationships in children and young people with autism provides us with a valuable insight into the social challenges and abilities of this group of children. Whilst the differing findings presented by these articles demonstrate the variability seen within the autism spectrum, as well as the changes from childhood through to adolescence, a number of common themes can be drawn from the research, usefully contributing to our understanding in this area.

In terms of peer interactions, the research suggests that the interactions of children with autism differ in a number of ways from those of typically developing children. Specifically, not only is there a lower overall rate of participation in social interaction but also children with autism tend to interact with their peers for shorter amounts of time, engage in less

sustained play and have a reduced rate of initiations and responses when compared with their typically developing peers. Children with autism have also been shown to have difficulties with a large proportion of complex communicative social behaviours, such as sharing, using eye-contact in conjunction with facial expression, and using non-verbal facial and body cues to infer emotion in others. Their limited abilities in the more complex and socially demanding aspects of same-age peer relationships mean that this group of children tend to be restricted to engaging in more functional communications, and as a result may have a lower overall level of social network centrality and fewer reciprocal peer relationships than typically developing children. Crucially, younger children and those with less impaired social interaction skills have not only been shown to have more peer relationships, but generally experience these as more successful.

Peer Friendship

In their influential long-term follow-up study of a group of eighteen young men with autism, Howlin and Mawhood (1998, 2000) paint a somewhat bleak picture of the social and friendship difficulties experienced by children with autism as they progress through middle childhood towards adulthood, reporting 'major problems in establishing friendships' and low-levels of age-appropriate interpersonal relationships.

The following section focuses on a more detailed investigation of the peer relationship literature, looking at the quality of friendships amongst children and young people with an autism spectrum disorder. Once again, a search of the literature revealed a surprisingly low total of seven studies within this area, all of which were published between 2000 and 2008. The studies used a range of different methodologies, including two small-N case-studies, three child report studies, one using maternal report only, and a final, larger-N study (N=82),

using a combination of observation, child and parent report.

Case-Studies

A number of qualitative case studies have sought to capture the experience of young people with autism, in forming and negotiating friendships, as well as feeling accepted and included in the wider peer group. Carrington and Graham (2001) used a case study approach to investigate perceptions of school life for two thirteen-year-old boys with Asperger's syndrome, and their mothers. Data was collected using semi-structured in-depth interviewing, which enabled both the young people and their mothers to describe their own experiences using personal stories and reflections.

Amongst the authors' findings were first-hand accounts of the children's difficult experiences in developing friendships. One boy described regularly going home after school in tears, conscious of the friendships which his peers had successfully formed with each other, and painfully aware of his inability to do the same. In the same way, one of the mothers interviewed, described her son's incomplete understanding of the concept of a 'friend', as being someone who sat beside him and shared the contents of his lunchbox.

Howard, Cohn and Orsmond (2006), conducted a similar study to explore perceptions of friendship in an adolescent with Asperger syndrome. In their case study, data was collected from a twelve year old boy with Asperger syndrome, and his mother, through two semi-structured audio-recorded interviews, as well as via photographs taken by the child, of people and objects that were important to him.

The researchers found that, as well as talking about his own friendships, the adolescent in

their study was able to demonstrate an understanding of some of the key qualities of a friend: shared interests and proximity, help and support, caring and responding, forgiveness, reciprocity, and negotiating focused interests, as well as highlighting the difficulties he experienced in these areas. Notably, both he and his mother alluded to his desire to work on his friendships, and the enjoyment he gained from being a friend.

Whilst these studies provide a valuable insight into the quality of real-life friendship experiences for a small number of children with an autism spectrum disorder, their case study design has a number of limitations. Notably, the use of just one or two children raises the concern that the results gained may not be representative of the autism group as a whole, instead revealing behaviours and perceptions specific to the individuals involved. Moreover, since the focus of both case studies is quite different, each one being organised around different themes, it is not possible to compare the findings in any systematic way. The use of children's own verbal account carries the added risk that the responses given were in some way biased to give a more favourable picture of their experience.

Child Report Studies

Whilst the majority of the research literature supports the notion that children with an autism spectrum disorder are motivated to form friendships with their peers, few authors have sought to directly investigate the understanding which this group has of friendship. In their study, Bauminger and Kasari (2000), asked a group of children and adolescents with high-functioning autism about their perceptions of a friend, and the qualities of their friendship with a best friend, and compared these with the views expressed by a matched group of typically developing peers.

Twenty-two high functioning children with autism and nineteen typically developing children between the ages of eight and fourteen were asked to complete standardized self-report measures of both their understanding and feelings of loneliness and the quality of their friendship using the Loneliness Rating Scale (LRS, Asher et al., 1984) and the Friendship Qualities Scale (Bukowski, Boivin & Hoza, 1994). Participants were matched for IQ, chronological age, gender, mother's education and ethnicity. In addition to the self-report measures, mothers of the children within the high-functioning autism group were asked to report on the number of friends their child had, the types of activities their child engaged in when playing with friends, and the frequency of scheduled play dates.

When asked to describe what a friend was, children's definitions were scored according to three criteria: companionship, intimacy and affective closeness. The authors found that children with autism were less likely than their peers to include the affective (41 percent compared to 74 percent in the typically developing group) and the companionship dimensions (59 percent vs. 90 percent) in their definition of a friend, with differences in relation to intimacy only approaching significance (41 percent of the autism group, compared to 68 percent of the comparison group). Overall, forty-seven percent of the typically developing group were able to provide definitions which included all three friendship dimensions, whereas this was seen in only 10 percent of the children within the high-functioning autism group.

With respect to their own friendships, all 22 children with autism could identify one best friend prior to their performance on the Quality of Friendship Scale. Their scores on this questionnaire indicated that, as a group, they perceived their friendships as lower on the dimensions of companionship, security-intimacy, and help, but not on closeness or conflict,

when compared with the friendship qualities of typically developing children.

Bauminger and Kasari propose two explanations for the high rates of affective closeness reported by the high-functioning children with autism in their study. Firstly, they suggest that these reports may have represented a desired closeness rather than actual closeness in their friendship. Alternatively, they hypothesize that, given the difficulty experienced by children with autism in establishing friendships with peers, they are likely to cherish and describe in favourable terms those which they have already achieved, thus reporting high closeness in friendship.

A comparison of maternal and child reports of the child's number of best friends revealed a significant difference between the two, with mothers reporting their children to have a greater number of friendships than were reported by the children themselves. Several themes emerged from mothers' comments about their children's friendships, particularly concerning the frequency and content of play. Firstly, they frequently described how their child had 'desired relationships' rather than actual friendship relationships, for example, 'best friends' who seemed to ignore the child with autism most of the time. They also described their children's friendships as revolving around video games or films which involved little reciprocal interaction. Most interactions were reported to take place at home or at school, with children rarely initiating play with their neighbours. Finally, the majority of children with autism had at least one friend with special needs, and in a few cases, family relatives were also counted as friends.

Bauminger, Shulman and Agam (2004) sought to build upon their earlier research by further exploring the associations between perceptions of self and of social relationships, and more

specifically friendships, in high-functioning children with autism. In this study, the authors examined group differences in the perception of friendship between 16 typically developing children from 8 to 17 years old, matched for age, IQ, gender and mother's education with a group of sixteen high-functioning children with autism.

Two different measures were used to evaluate children's perception of friendship, including the Friendship Picture Recognition Interview and an open-ended projective test with an emphasis on evaluating the child's perception of friendship without specific reference being made to their own social relationships with peers. In addition, the self-report Friendship Qualities Scale (Bukowski et al., 1994) was used to assess children's perception of the qualities of their friendship with a best friend, as well as the Loneliness Rating Scale (Asher, Hymel & Renshaw, 1984) and the Self-Perception Profile for Children (Harter, 1985), which aimed to assess children's perceptions of themselves across six domains.

The results of the study present a complex picture regarding the perception of friendship and the link between the perception of self and of social relationships in high-functioning children with autism. Within the picture recognition task, this group of children demonstrated considerably more difficulty recognising friendship from a picture without a direct verbal cue (only 50 percent of the autism group could name the picture as friendship, compared with 81 percent of children in the control group), as well as relating less to the intersubjective qualities of friendship, such as affective sharing and intimacy. Despite this, they perceived their own friendship with a best friend to be as close as the friendship depicted by typically developing children. These results replicate Bauminger and Kasari's earlier study, in which children reported high levels of closeness in their relationships (Bauminger and Kasari, 2000).

The findings of these child report studies contribute usefully to our understanding of the nature and value of friendship in children with autism. A strength of both designs is the use of well-validated peer relationship measures, such as the Friendship Qualities Scale (Bukowski et al., 1994). Moreover, the similarity of methods across studies means that the findings from both can be compared with each other, and similarities observed. For example, both studies report similar findings with regard to children's perceptions of intimacy and closeness within their friendships.

Unfortunately, since both studies have small sample sizes, and include only children with high-functioning autism, the findings cannot be generalised to the wider autism population, and thus further research is still needed to explore the friendship experiences of children with greater levels of autism-related impairment. Furthermore, the use of children from such a broad age range introduces the possibility that the findings may be confounded by the different levels of importance attributed to various aspects of the friendship relationship at different stages of childhood and adolescence. For example, research shows that the importance of intimacy within friendships increases during adolescence (e.g. Asher et al. 1996; Parker and Gottman, 1989). By examining within-group differences, the authors may have been able to identify differences between the perceptions of younger children, and those at the higher end of the age range, thus enabling them to comment on the developmental trajectory of the experience and perception of friendship in children with high-functioning autism, the demands of which have been reported by earlier studies (see Koning and Magill-Evans, 2001).

The final child report study (Wainscot, Naylor, Sutcliffe, Tantam & Williams, 2008) used a case-control design to investigate the in-school social relationships and friendships of

mainstream secondary school pupils with high-functioning autism. Thirty children with high-functioning autism (HFA) and 27 controls, aged from 11 to 18 years, were interviewed at the end of a school day using a structured interview schedule, written specifically for the study, which asked them about their social interactions with peers during that school day. To investigate the possibility that having a special educational need, rather than having an autism spectrum disorder per se, was a risk factor for being the target of social isolation and bullying, a small control group of children with a specific learning disability (dyslexia) were included in the study. Case-control dyads were matched on age, gender, academic ability, physical size, lessons attended during the research day, socio-economic background and ethnicity.

The study findings supported the researchers' initial predictions that children within the high-functioning autism (HFA) group would spend less time with friends, and would engage in fewer social interactions during the school day than children in the two control groups. Moreover, they found that the majority of these children also spent their break and lunch times inside the school buildings, rather than spending time outside with their peers. As in Chamberlain et al.'s (2007) study, despite having fewer friends, and experiencing more episodes of bullying and social isolation, the children with high-functioning autism reported "looking forward to school" and having similar levels of school enjoyment to those reported by their typically developing peers. The authors suggest that this finding may be explained in terms of the deficit in reflective skills frequently observed in this group.

In response to questioning regarding their friendships, children within the HFA group reported having significantly fewer friends, and speaking to fewer class peers than controls, suggesting that they have less extensive social networks than their peers. Despite this, they

were just as likely to have a best friend at school, illustrating the important role of friendship to children with high-functioning autism.

Parent Report Studies

In their 2003 study, Bauminger and Shulman used an interview-based measure to investigate the differences in maternal perceptions of the development of friendship in a group of high-functioning children and adolescents with autism, and a group of typically developing peers. Children in the two groups were matched on chronological age, which ranged from 8 to 17 years, full-scale IQ, as determined by the WISC-R, gender and maternal education.

Fourteen mothers in each of the two groups were asked a series of closed and open-ended questions using the framework of Buysse's 'Early Childhood Friendship Survey' (Buysse, 1991). The questions were aimed at evaluating the nature, development and maintenance of friendship, and addressed the child's mutual friendships. Unilateral friendships in which the child initiated interactions with a peer who did not reciprocate were also explored, however these relationships were excluded from the analyses since mothers felt that they could not reliably report on their children's unilateral connections.

The authors found significant differences between child groups in terms of number of friends, friendship duration, and frequency of meetings reported by mothers. Mothers of children with typical development perceived their children as having more friendships, over a longer time, and with more frequent meetings, compared with reports given by mothers of high-functioning children with autism.

In terms of the age of friends in each group, the findings indicated that the majority of children in both groups (64 percent in the autism group and 93 percent in the typically

developing group) had friends in their own age range. However, four of the children with autism had friends who were younger than them, compared with only one of the children from the typically developing group. Moreover, children from the autism group were significantly more likely to choose a child with special needs as a friend, compared with typically developing children (50 percent compared to just 7 percent, respectively).

Finally, differences emerged in relation to the types of activity in which children from the two groups chose to participate with their friends. Mothers of children with high-functioning autism reported that their children were more likely to play board games, watch TV or a video together, or play on the computer, and were less likely to spend time talking together, playing ball games (football or basketball), or engaging in pretend play. In contrast, mothers of children with typical development cited ball games as their child's most frequently enjoyed shared activity, as well as more interactive and socially demanding 'going out' activities such as going to the cinema, shopping and 'hanging out' together. Playing on the computer and watching TV were reported at relatively high frequencies by mothers of children in both groups.

The authors also investigated maternal perceptions of the factors that contributed to the development and maintenance of children's friendships. They found that, in the case of non-mixed friendships, i.e. friendships between a child with autism and another child with a disability, children with autism were more likely to be friends with children who were studying in the same class, or who attended the same after-school activities. Similarly, some children had developed friendships with their typically developing peers through being in the same class, whilst others had become friends as a result of contacts formed between parents.

In terms of the maintenance of friendships, Bauminger and Shulman (2003), found that high-functioning children with autism who had mixed friendships with typically developing children tended to be highly dependent on their mothers for ongoing support, not only in providing opportunities for their child to meet with other children, but also in helping them to find an 'appropriate' friend, and encouraging them to initiate contact as well as supporting the ongoing process by physically bringing the friend over and taking the children to fun activities. Moreover, initiating contact with the friend's parents seemed to be important in ensuring the continuation of the children's friendship.

Conversely, mothers of typically developing children reported that their children's friendships arose and were maintained mainly as a result of shared interests such as football, similar styles, close proximity and the kindness of the friend. In contrast with the autism group, half the mothers of the typically developing children reported that they could not help, or did not want to get involved or interfere with their child's social relationships, suggesting that they had confidence in their child's ability to maintain their own friendships without outside support or mediation.

Bauminger and Shulman's (2003) maternal report study provides useful information about the processes involved in the formation and maintenance of friendship in children with high-functioning autism, and verifies earlier data, based on children's self-report (Bauminger & Kasari, 2000) which noted that this group of children do have friends. However, one limitation of the study is its reliance on a single source of information to investigate friendship in children with autism. Whilst parents are considered to be important informants regarding early childhood friendship (Buysse, 1991), a large number of mothers in this study, which involved somewhat older children, reported that they did not like to

involve themselves in their child's peer relationships. This suggests that they may not have been very reliable informants, and consequently the use of maternal report in this study may have introduced a number of inaccuracies and misperceptions. In the future, such problems could be avoided by adopting a multi-informant design, which incorporates the views of the children and young people themselves.

Child & Parent Report Studies

A recent study by Bauminger et al. (2008), used a multi-informant design to explore the characteristics of peer friendship in children with autism. In their study, which sought to address the concerns raised by previous research using a single source of information, 44 children with high-functioning autism were compared with 38 typically developing children, as they interacted with a close friend. Participants were aged between 8 and 12, and were matched on SES, receptive language vocabulary, age and gender. The authors implemented a multidimensional assessment battery, which included: observation of children's interactions with a close friend during two experimental scenarios, child self-report measures to assess both children's perceptions of their mutual friendship qualities, and an interview with the mother of each target child, to obtain general information about their child's friendship.

Maternal reports of children's friendships revealed similarities between the high-functioning autism and typically developing group for both gender of chosen friend and friend's age, however children within the autism group were more likely to have a friend with a disability than children in the typically developing control group. Moreover, in line with previous research, children in the control group reported seeing their friends more often than those in the autism group.

The findings from the two observational tasks, which involved a joint construction game and a drawing exercise, revealed that children in the autism group showed lower frequencies of several different interactive behaviours, including goal-directed behaviours, sharing, non-verbal behaviour and positive affect. In addition, differences were identified between the two groups in terms of play skills, with children with high-functioning autism demonstrating a higher frequency of parallel play, and a lower frequency of coordinated play compared to children in the typically developing group. This finding is consistent with other observational studies reporting higher levels of parallel, rather than cooperative activities in children with an autism spectrum disorder (e.g. Bauminger & Shulman, 2003).

Socially, children in the autism group revealed a more rigid conversational style and manifested less social conversation than the control group. Overall, pairs of friends in the autism sample demonstrated a lower dyadic quality of friendship, and lower levels of shared fun than those observed within typically developing friendship dyads.

In terms of self-perception of friendship qualities, children in the high-functioning autism group perceived their friendships as being lower on the dimensions of help, intimacy, and closeness than controls. Moreover, child age was found to be linked negatively with companionship and help, and positively with conflict. With regard to observed friendship manifestations, older children with high-functioning autism were seen to demonstrate more prosocial behaviours, a lower level of parallel play, higher levels of conversational flow, and higher cohesiveness and coordinated play, in comparison to younger children. The authors suggest that these results may reflect the simpler interactive demands of younger children's friendships. Alternatively, they may imply delayed development of interpersonal awareness in children with high-functioning autism, in which younger children may overestimate their

friendship qualities, whilst older children tend to understand relationships more deeply, and thus can evaluate their friendships more accurately and more negatively, even in the face of more sophisticated social abilities than the younger children. Further research using longitudinal methods is needed to explore in more detail the relationship between increasing age and the individual's experience of friendship.

Summary

Research on friendship in children with an autism spectrum disorder provides us with further insight into the quality of relationships, as well as the social difficulties faced by this group. The important contribution made by qualitative research has enabled us to learn about the first-hand experiences of these children in forming friendships, and their own awareness and frustration with the social communication difficulties which set them apart from their peers, but more importantly, has served to highlight how children with autism are indeed motivated to form meaningful social relationships with their peers, and in most cases do have at least one peer relationship which they describe as a friendship.

In terms of the quality of friendships seen amongst this group, the literature indicates that children with autism seem to have less stable friendships and meet their friends less often than typically developing children. In addition, they are involved in different types of activities when they meet with friends, preferring more structured activities such as board games, or activities that do not require high levels of social exchange. The literature suggests that friendships within this group rarely emerge spontaneously, or persist without the help and mediation of others in the child's close social environment, in contrast with the friendships of typically developing children.

When defining their understanding of friendship, the research suggests that children with autism are less likely to include affective and companionship dimensions in their definitions, and also tend to perceive their own friendships as being lower on the dimensions of companionship, help, intimacy and closeness than their typically developing peers. Whilst some aspects of friendship seem to be an ongoing source of difficulty, some research suggests that, as they get older, children may be able to develop more of an awareness of their own social impairments, and also learn to demonstrate more prosocial behaviours, develop greater conversational ability and engage in higher levels of coordinated play than younger children with autism spectrum difficulties.

Peer Relationship Difficulties

In exploring the peer interactions and friendships of children with an autism spectrum disorder, the research literature thus far has highlighted a number of areas of difficulty for this group of children. However, one area which has received little attention is the impact that these peer relationship difficulties have on the individual child, both emotionally and practically, and conversely, how other people within the child's immediate environment respond to these difficulties. Whilst the literature within this area remains small, in recent years a number of studies have attempted to examine these issues, exploring children's experience of loneliness and, more recently, looking at the experience of peer bullying and victimisation within this group.

A search of the literature yielded only two studies focusing on loneliness in children with an autism spectrum disorder, both of which used child report methods to explore this area more fully. The third study, notable as being the only research relating to peer victimisation within this group, used a large-N parent report design to explore maternal perceptions of

peer and sibling victimization among children with Asperger's syndrome.

Child Report Studies

The experience of loneliness was explored in a child report study carried out by Bauminger and Kasari (2000). In their study, which also looked at children's perceptions of friendship (see peer friendships section), 22 children with high-functioning autism, and 19 typically developing children between the ages of 8 and 14 completed the Loneliness Rating Scale (Asher et al., 1984), a standardized self-report measure assessing children's global feelings of loneliness. The questionnaire included sixteen items focused on feelings of loneliness and social dissatisfaction (e.g. "I have nobody to talk to in class" and "I feel left alone at school"), and eight filler items covering the child's hobbies and interests. Children were asked to rate each item on a five-point scale from 'not true at all' (1) to 'always true'. Higher total scores were interpreted as indicating a greater sense of loneliness.

In addition, children were asked to define loneliness, following the prompt 'Can you describe what lonely means?', and to provide an example of a time when they felt lonely. The definitions given by children were coded on two dimensions: an affective domain, which assessed whether the child indicated that loneliness included being sad, afraid or depressed, and a social-cognitive domain, which related more to the idea of loneliness as being associated with unfulfilled relationships, exclusion and dissatisfaction from social relationships.

In terms of their initial hypothesis, the authors proposed that if children with autism were found to experience loneliness, then it would be reasonable to infer that they must have the social desire to be involved in relationships. Their hypothesis was based on the understanding that loneliness generally occurs when an individual recognises the absence of

a close and intimate relationship, or feels the lack of an accessible social group (Asher, Parkhurst, Hymel & Williams, 1990).

The study findings indicated that children in the high-functioning autism group were much less likely to provide a complete definition of the concept of loneliness, with only 30 percent of this group giving a definition which included both the affective and social-cognitive dimensions, compared with over 70 percent of the typically developing group. Paradoxically, however, the autism group reported greater feelings of loneliness than did their typically developing peers. In terms of their understanding of the relationship between loneliness and friendship, few associations were found. In contrast, understanding and reporting of friendships and loneliness were highly related in the typical children, with total loneliness scores (LRS) in this group showing a negative association with closeness in the friendship-quality rating scale.

Interestingly, whilst all of the children with autism reported having at least one close friend, loneliness seemed to be experienced by this group more intensely and more frequently than it was by typical children. Since closeness in typical friendships is thought to reduce loneliness, this raises the question of whether children with autism may understand and experience loneliness in a qualitatively different way to their typically developing peers, lacking what the authors describe as the ‘affective glue’ which connects the closely related concepts of friendship and loneliness. This notion may be partially supported by the finding that the majority of children within the autism group were unable to provide a definition of loneliness which included both of the key affective and social-cognitive dimensions.

The results of this study raise a number of questions about the emotional understanding of

friendship and loneliness in children with autism. Moreover, they highlight a limitation of the study, in failing to take into account the different meaning which may have been attributed to loneliness, and the relationship between loneliness and friendship for children with autism. As a result, the authors cannot provide support for their initial inference that children who experience loneliness must have the social desire to be involved in relationships. Further research is therefore needed to explore the experience of loneliness for this population of children.

The second study to address loneliness in children with autism was similarly conducted as part of an exploration of children's peer friendships. In their research, Bauminger et al. (2004), adopted a similar design to their previous study (Bauminger & Kasari, 2000), using the Loneliness Rating Scale (Asher et al., 1984), to assess loneliness in a group of 16 children with high-functioning autism and 16 typically developing children. In order to build upon their previous research, the authors also used several other child report measures to explore children's experience of friendship, enabling them to look more closely at the relationship between friendship and loneliness in children with autism.

As in their earlier study (Bauminger & Kasari, 2000), the authors found that, in comparison to typically developing children, children with autism reported higher feelings of loneliness. However, in contrast with their previous work, friendships amongst this group were found to correlate significantly with both loneliness and self-perception, with all but one of the qualities of friendship with a best friend correlating highly negatively with loneliness. Moreover, children who perceived their social relationship with a friend as high in companionship, help, security, and closeness also perceived themselves as less lonely, and reported a greater sense of self-worth.

A strength of both of these studies is their use of well validated, reliable measures of child friendship and loneliness. Moreover, the similar methodology employed in each allows for easy comparison across studies. Despite this, their usefulness is limited somewhat by the small sample sizes used, as well as the narrow inclusion criteria, confining their investigation to only children with high-functioning autism, and thus restricting the external validity of findings to children at more impaired levels of the autism spectrum.

Parent Report Studies

The final study exploring peer relationship difficulties in children with autism (Little, 2002) used a maternal report design to investigate peer and sibling victimization among children with Asperger's syndrome. Anonymised mailed surveys were sent to the parents of 411 young people between the ages of 4 and 17. Mothers were asked to complete the peer and sibling section of the Juvenile Victimization Questionnaire (JVQ) (Hamby & Finkelhor, 1999), an instrument containing questions on a number of different areas of victimization in young people, including physical assault by a peer or sibling, emotional bullying and social exclusion. Mothers were asked to report responses in terms of frequency of occurrence, ranging from 'never' to 'six or more times'.

The author's results indicated that peer victimization among this group of children was common, with 94 percent of mothers reporting that their child had experienced some form of peer victimization by typically developing children within the past year. The most commonly reported form of victimization (at 75 percent) was bullying by peers and siblings. Ten percent of parents also reported that their child had been attacked by a gang of young people during the past year. Regarding the age at which risk of bullying was greatest, the study findings suggested that emotional bullying increased steadily with age, peaking at

around 13 years of age, whilst physical bullying showed peaks at the ages of six, eight and ten. Children of these ages were bullied an average of three to four times a year, with younger males with Asperger's syndrome being at greatest risk of being hit by peers.

The data on peer shunning indicated that over half of the sample had never or only once been invited to another child's birthday party in the last year, and a third of children also often sat alone during school lunch times. Children's experience of peer shunning was found to increase with age, as well as correlating highly with physical and emotional bullying.

Whilst this research study was the first to address the important area of peer bullying and victimization among children with an autism spectrum disorder, there are a number of methodological weaknesses to consider. Firstly, the sample of parents recruited to participate in the study was greatly biased, including mostly white middle-class educated parents, over half of whom had achieved a degree level qualification. Moreover, since parents were recruited into the study via an invitation posted on an autism website, families who did not have access to a computer were unable to participate. The method of recruitment used by the author also meant that it was likely to attract parents who felt that peer victimization was already an area of great concern for their child, increasing the likelihood that any findings would be skewed.

In terms of the measures used, not only was the study restricted to seeking the views of parents, rather than the real-life experiences of children themselves, but also the level of detail requested by the questionnaire prevented the author from exploring in more detail the specific risk factors for peer victimization and bullying within this group. Further work is needed within this area, to increase our understanding of the risk factors for bullying

amongst this vulnerable population of children.

Summary

There is a growing body of evidence to suggest that children with an autism spectrum disorder are at risk of experiencing both loneliness and peer victimization as a result of their difficulties with peer interaction. Studies examining children's experience of friendship and loneliness have shown that, whilst their understanding of these constructs may differ from those of the general population, children with autism report feeling lonely much more frequently than their typically developing peers. Moreover, children with autism have been found to be at increased risk of peer and sibling victimization, experiencing both physical and emotional bullying at home and at school. Of concern is that the incidence of emotional bullying appears to increase with age, such that children facing the difficult transition from childhood to adolescence are confronted with an additional challenge to overcome, within the context of their ongoing difficulties with peer interaction.

DISCUSSION

The current literature provides a valuable insight into the challenges faced by children with autism spectrum disorders in developing social relationships with their peers. The following discussion summarises the findings and implications of the research, before exploring some of the major methodological issues within this field. In concluding the review, the discussion will focus upon the identification of future directions for research into the peer relationship experiences of children with an autism spectrum disorder.

Study Findings and Implications

Whilst the body of research examining the quality of peer relationships in children with an autism spectrum disorder remains small, a number of recent studies have served to highlight key areas of difficulty for this group, and the impact that these difficulties have on the ability

to sustain peer relationships. In terms of peer interactions, studies have shown that children with autism differ in a number of ways from their typically developing peers. Specifically, this group shows a reduced level of participation in social interaction, initiating and responding to social bids at a reduced rate and for shorter periods of time than typically developing children and those with a learning disability. Moreover, the difficulties these children experience with social understanding mean that they frequently struggle to decipher the more intricate non-verbal communicative behaviours used by their peers, and, as a result, tend to be limited to engaging in more functional, structured interactions which rely on rote learning rather than spontaneous use of verbal and non-verbal communication.

As a result of their difficulties with peer interaction, children with autism generally struggle to develop and maintain reciprocal friendships with their same-age peers. In spite of their motivation within this area, the literature suggests that they have a lower overall number of friends, and tend to meet with these friends less frequently than typically developing children, or children with other special educational needs. In terms of the quality of friendships, parent reports indicate that children with autism tend to engage in more structured activities with their friends, and require greater support and involvement from their parents in order to ensure the maintenance of friendships.

Children with autism may understand and define their own friendships differently from other children. A number of studies have reported that, in defining friendship, this group are less likely to include affective and companionship dimensions in their definitions, thus suggesting that they have a quite limited understanding of friendship. This is further supported by qualitative case-study research, which provides examples of the narrow friendship criteria adopted by one child with high-functioning autism.

Finally, studies exploring the negative sequelae of peer relationship difficulties have identified high rates of loneliness and peer victimization amongst this group. This finding suggests that the difficulties children with autism experience in forming and maintaining reciprocal peer relationships not only result in reduced levels of friendship, but may also have adverse consequences in terms of their emotional health and wellbeing.

Methodological Issues

The small body of research literature within this field incorporates studies applying a wide range of different research methodologies, from small-N case studies to large multi-informant investigations. Whilst each study provides a valuable contribution to our understanding of peer relationships in children with autism, there are a number of limitations to the different approaches used.

Notably, a large proportion of the studies reported in this review used small sample sizes, in some cases employing single case-study methodology to examine the experiences of just one or two children. Whilst this approach enabled the researchers to capture important qualitative aspects of children's experience, it also increased the risk of missing important relationships within the data, and identifying patterns among the small groups of children involved which may not be readily identifiable in the larger autism population. For instance, one study (Hauck et al., 1995) found a significant difference between the number of children engaging in play interactions in the autism group compared with those in a learning disabilities group, when group sizes were so small that this difference amounted to just two children.

In terms of child participants, the majority of studies focused upon the peer relationships of children from the high-functioning end of the autism spectrum. Whilst there are definite

advantages to this approach in terms of the quality of information, and level of insight demonstrated, this does mean that the findings can be less easily applied to children at all levels of functioning. Furthermore, it highlights how the experience of children with greater levels of impairment may be somewhat neglected in the peer relationship literature.

A surprisingly small number of studies met criteria for inclusion in the current review. Of these, three used observational methods, four used child report, three parent report and a final three used a multi-informant approach. Each study design afforded a different perspective on children's peer relationships, with child observation perhaps providing the most direct insight into the social interactive behaviour of this group. Interestingly, the findings from parent and child report studies revealed a mixed picture, with children tending to portray their friendships somewhat more positively than parents, possibly due to their tendency to give what they felt to be the 'correct' or socially desired response. However, perhaps the most informative studies were those which used a multi-informant, multi-methodology approach to investigate children's peer friendships (e.g. Bauminger et al., 2008). Collecting data from a combination of observation, child and parent report, these studies were able to highlight the similarities and incongruencies between the social behaviours they observed directly, and the perceptions of friendship offered by children and their parents. Moreover, since these studies tended to employ well-validated measures, such as The Friendship Qualities Scale (Bukowski et al., 1994), the findings could be interpreted with greater confidence than those which adopted less reliable approaches to coding and measurement.

Conclusion and Future Directions

The goal of this review was to investigate the nature and quality of peer relationships in children with an autism spectrum disorder. Whilst it is clear from the literature that these

social relationships constitute a major source of ongoing difficulty for this group, the research is far from conclusive. The small number of studies and lack of methodological consistency mean that only tentative conclusions can be drawn in relation to children's experience of peer friendship and relationship difficulties.

Further research is needed to build upon our current knowledge and awareness of the nature of peer relationships and friendships for this population of children, as seen from multiple perspectives, in order to ensure that they can be supported to form meaningful and fulfilling social relationships throughout the key stages of their development. In addition, future attention should be given to the exploration of peer relationship difficulties, and particularly peer victimization and bullying of children with autism, since it seems that this area, which, until recently, has been largely neglected in the literature, may have serious implications for the emotional health and wellbeing of children and young people with autism spectrum disorders, both now and in the future.

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Part 2: Empirical Paper

The Experience of Friendship and Bullying in Children with an Autism Spectrum Disorder

ABSTRACT

This quantitative study explored the friendship and bullying experiences of one hundred 10 to 12 year old children with an autism spectrum disorder, using child, parent and teacher report measures. Child-specific risk factors for friendship and bullying difficulties were investigated. Higher levels of friendship difficulty were associated with lower IQ, greater social interaction impairment and higher levels of repetitive and stereotyped behaviour, but not with receptive language or severity of communication symptoms. Three-quarters of children reported having experienced bullying at school, with the risk highest amongst children with less impaired social interaction. In terms of environmental risk factors, there was no evidence to suggest that children in mainstream schools experienced more friendship difficulties and bullying than children attending special needs schools. Future research is needed to develop effective strategies to support and improve the social interaction skills of children with autism. to enable them to develop and maintain meaningful peer friendships.

INTRODUCTION

Peer friendships are a significant social experience for children and adolescents, constituting a basic and essential affective relationship based upon reciprocal, stable interactions within the context of a close, intimate, affectively and relatively long-term tie (e.g. Bauminger et al., 2008; Dunn, 1993; Howes, 1996). Moreover, friendship provides children with a context within which to develop and practice fundamental prosocial behaviours, including mutual caring, companionship, and empathy. It is through these relationships that the child has the opportunity to develop the ability to compromise, the capacity to understand and to develop efficient strategies for conflict resolution (Asher, Parker & Walker, 1996).

Recent research on social information processing has emphasised that the quality of children's peer relationships has a direct influence on each stage in the processing of social situations, with close friendships motivating the child to embark upon more complex social information processing tasks and develop their mentalising ability (Lemerise & Arsenio, 2000). Thus, friendship both requires and helps to develop social skills, contributing to all areas of development including cognitive and language ability, symbolic thinking, emotional understanding, expressiveness and representational capacities (Bauminger, 2003; Dunn, 1993; Hartup, 1996).

In middle childhood, peer friendships provide a context for building trust and experiencing intimacy through sharing feelings and experiences with same-age peers (Asher et al. 1996; Parker and Gottman, 1989), whilst also providing the child with a sense of belonging and self-worth (Bagwell, Newcomb & Bukowski, 1998). Moreover, having a friend serves as an important source of emotional support and protection from loneliness and social rejection. Research shows that friendship is an important mediator of social adjustment and

interpersonal competence, with a lack of friends being associated with later adjustment problems (e.g. Buhrmester, 1990; Burgess, Wojslawowicz, Rubin, Rose-Krasner & Booth-LaForce, 2006; Parker & Gottman, 1989; Parker, Rubin, Price & DeRosier, 1995).

Friendship in children with an Autism Spectrum Disorder

Autism spectrum disorders (ASDs), including autism and Asperger syndrome, are neurodevelopmental disorders characterised by marked difficulties in social interaction, including impairment in the use of non-verbal behaviours, failure to create developmentally appropriate peer relationships and a lack of social or emotional reciprocity (DSM-IV-TR; American Psychiatric Association, 2000). The complex social experience of friendship constitutes a major area of difficulty for these children, who often do not cope well with the social demands of school, which include interactions with peers, understanding rules and codes of conduct (Attwood, 1998), and what to do at break and lunch times when they are typically left to their own devices (Wing, 1996). The research literature suggests that, unlike most typically developing children, those with autism may struggle to initiate play with their peers, preferring structured activities that provide clear and explicit rules, with low levels of social exchange (Bauminger & Shulman, 2003). As a result, they may have limited experience with their peers, lacking the social skills and 'know how' of friendship building (e.g. Lawson, 2001).

Early adolescence has been identified as a particularly challenging time for young people with ASDs, because of the increasing importance of intimate relationships. Stoddart (1999) suggested that adolescents with Asperger syndrome have an increasing awareness of their own differences, as well as a greater concern about peers' perceptions around this time. Notably, his research found that this increased awareness frequently developed at a time when they were experiencing teasing and rejection by peers, resulting in markedly

diminished self-esteem. Such negative social outcomes have been shown to have considerable adverse psychological consequences for the child, in some cases leading them to experience depression and social withdrawal (Sandstrom & Zakriski, 2004; Seepersad, 2006).

Social interaction can be a stressful and anxiety-provoking experience for children with an autism spectrum disorder (Carrington, Templeton & Papinczak, 2003), not least because they often lack adequate understanding of the social hierarchy that exists in schools (Sainsbury, 2000). Despite this, friendship seems to comprise an important part of their everyday experience. Research has shown that children with autism desire social relationships and identify feelings of loneliness significantly more often than typically developing children (Bauminger & Kasari, 2000). Moreover, personal accounts of the experience of people with Asperger syndrome have not only demonstrated their ability to reflect on their own social relationships, but also highlighted the important role of friendship in their lives (Hurlbutt & Chalmers, 2002; Jones & Meldal, 2001). This suggests that, whilst children with ASD may experience additional challenges in forming social relationships, their desire for inclusion within a friendship group, and conversely the impact of exclusion from such groups, can have a dramatic impact on their quality of life and psychological wellbeing.

Bullying

Bullying in schools and communities has been described as an “endemic community problem” (Tattum & Herbert, 1997). It is defined as the systematic, repeated abuse of power (Smith & Sharp, 1994) involving physical and verbal abuse as well as acts of indirect aggression (Björkqvist, Lagerspetz & Kaukiainen, 1992), characterised by gossiping,

spreading malicious rumours and deliberate attempts at exclusion from the child's social peer group (Lagerspetz, Björkqvist & Peltonen, 1988). It's prevalence and negative impact on children and young people has been extensively investigated (Bowers, Smith & Binney, 1994; Finkelhor, Mitchell & Walak, 2000).

Research has shown that bullying and peer victimization are associated with both short and long-term negative psychological health outcomes for children. Hodges, Malone & Perry (1997) report a greater incidence of depression, low self-esteem, anxiety, loneliness as well as lower academic achievement in children who have been bullied. In one study, victimization of children and adolescents during middle school was predictive of depression and low self esteem as much as ten years later, in adulthood (Olweus, 1992). In addition to its impact on psychological health, bullying is thought to have an adverse impact on the victim's academic achievement and desire to attend school, with a number of studies showing lower self-reported academic achievement and objectively lower grade point averages in victims of bullying (Juvonen, Nishina & Graham, 2000; Nansel et al., 2000; Nishina, Juvonen & Witkow, 2005).

Cognitively and physically disabled children have been shown to be at greater risk of bullying and exclusion than their non-disabled peers (Llewellyn, 1995; Santich & Kavanagh, 1997; Thompson, Whitney & Smith, 1994). Among children with disabilities, severity of a child's disability has been associated with lower peer acceptance in mainstream school settings (Cook & Semmel, 1999). Furthermore, children with disabilities report that peer relationships and exclusion from social groups are ongoing problems throughout their school life (Lightfoot, Wright & Sloper, 1998).

Studies of typically developing children attending mainstream school, have found child characteristics such as age and gender to be associated with the likelihood of being victimized by peers. For example, bullying has been found to decrease with age, and the incidence of physical victimisation is greater for boys than it is for girls (Crick & Bigbee, 1998; Sourander et al., 2000).

Despite the serious and long-lasting effects of peer bullying on the psychological health and wellbeing of the child, very little research has been carried out to look more closely at the incidence and risk factors for bullying within different school settings, and in different groups of potentially at-risk children.

Bullying in Children with an Autism Spectrum Disorder

Given the additional social challenges experienced by children with an autism spectrum disorder in forming meaningful peer friendships, it could be hypothesised that these children are likely to be at greater risk of social isolation and peer relationship difficulties, than their typically developing peers. In fact, children with autism have been described as “perfect victims” when it comes to victimisation by their peers, because of their profound lack of social skills (Klin, Volkmar & Sparrow, 2000).

Following their ‘Make School Make Sense’ postal survey campaign (2006), the National Autistic Society reported that over forty per cent of children with an autism spectrum disorder have experienced bullying and peer victimization at school. Little (2002) reported this figure to be as high as ninety per cent, with a diagnosis of Asperger’s syndrome being found to be positively correlated with peer shunning.

The negative effects of bullying on children and adolescents with ASD are clearly

documented in the literature. In their 2006 'B is for Bullied' publication, the National Autistic Society reported that over eighty per cent of parents felt their children's self-esteem had been damaged as a result of peer bullying. In addition, three-quarters reported a negative impact on the development of their child's social skills and relationships. Of those children who had been bullied, sixty-three per cent of parents also felt that the experience had impacted negatively upon their child's mental health, with some parents reporting that bullying had led their child to engage in self-harming behaviour and suicidal ideation.

Child-Specific Risk Factors

Very little research has been carried out to explore the specific factors which seem to increase the vulnerability of children with ASD to bullying by their peers. However it is clear that, in terms of their social communication, children with autism spectrum disorder often struggle to decipher the intricacies of nonverbal behaviour such as tone of voice, gestures, facial expressions and body language. Moreover, their somewhat inflexible and literal understanding of language can make it hard to understand the motives of other children when it comes to sharing jokes and understanding social rules, making them an easy target for the derision and mockery of their same-age peers (e.g. Little, 2002).

Children and adolescents with autism spectrum disorders frequently experience acute anxiety in more unfamiliar situations, exacerbating their difficulties with flexibility and change (Rourke, 1995). They may act in ways which seem unconventional or strange as a result of not understanding social rules and norms. In addition, their restricted and sometimes unusual range of interests, repetitive behaviours and narrow focus of conversation can cause them to stand out as 'different', particularly within a mainstream school setting, compounding their isolation and making them more prone to teasing and

rejection by their peers (Carrington & Graham, 2001).

Environmental Risk Factors

A recent government initiative to facilitate the inclusion of children with autism spectrum disorders into mainstream educational settings has resulted in increasingly large numbers of these children being placed in mainstream rather than special needs school placements (Special Educational Needs and Disability Act, 2001). In a recent study, sixty percent of children and adolescents with autism spectrum disorders in England were found to be educated within mainstream school settings (Wainscot et al., 2008).

Whilst some of these children may function well in mainstream schools, others may require the additional support of a special educational needs environment. This presents the parents of secondary-school aged children with ASD with a considerable dilemma: whilst their child may be able to cope well with the academic demands of a mainstream school setting, their social integration difficulties may put them at a disadvantage when it comes to forming and maintaining friendships with their peers.

Some evidence suggests that, in certain situations, mainstream school placements may lead to increased rejection of children with disabilities (MacMillan, Gresham & Forness, 1996; Ochs, Kremer-Sadlik, Solomon & Gainer Sirota, 2001; Sale & Carey, 1995), with severity of a child's disability being associated with lower peer acceptance (Cook & Semmel, 1999). For children with autism spectrum difficulties, it is likely that their somewhat inflexible social skills, narrow focus of interest and idiosyncratic behaviour may also cause them to stand out as "odd" (Carrington & Graham, 2001; Carrington et al., 2003; Sainsbury, 2000), putting them at risk of marginalisation, bullying and alienation by their more socially able peers (Granizo et al., 2006).

It is generally assumed that such peer relationship difficulties may be reduced, or even avoided altogether, within a special educational needs context, where the child may not only receive more specific, structured support, but also where the social demands may not be as great. As such, the child's immediate peer group is likely to be less cognitively and socially able, consisting of children with a range of social, sensory, physical and behavioural difficulties, for whom the task of friendship formation may present a similar challenge. Moreover, they may have less of an awareness of their individual differences, and so show a greater acceptance of their peers, regardless of any social or behavioural difficulties.

The experience of friendship and bullying in children with an autism spectrum disorder

The current study aims to explore and describe the experience of friendship and peer bullying in a group of children and adolescents with an autism spectrum disorder. More specifically, the study uses a combination of child interview, parent and teacher report measures to investigate the prevalence and extent of friendship difficulties and bullying in children with ASD attending mainstream schools, and those attending special educational needs schools. In doing so, the study also aims to identify child-specific factors across both educational settings, which may make children with autism spectrum disorders more vulnerable to peer bullying, and those which may contribute to their difficulties in forming and maintaining friendships.

Research questions and predictions

In addition to reporting the prevalence of friendship difficulties and experiences of bullying amongst children with autism spectrum disorders, the current study aims to investigate the following research questions:

1) How are friendship difficulties and bullying in children with an autism spectrum disorder related to their autistic symptomatology, IQ and receptive language?

Children with an autism spectrum disorder have been shown to experience greater friendship difficulties than their typically developing and verbally-matched learning disabled peers (Hauck, Fein, Waterhouse & Feinstein, 1995). Since the major area of impairment in children with ASD appears to be in their ability to socially interact and communicate with others, it is predicted that the severity of friendship difficulties as assessed by child, parent and teacher report will be associated with degree of autistic symptomatology as assessed by the three ICD-10 domain scores. It is also predicted that peer friendship difficulties will be associated with IQ and receptive language ability, with lower IQ and receptive language ability being associated with greater levels of difficulty.

Since a lack of friendships has been shown to increase the child's vulnerability to bullying and peer exclusion (Hodges et al., 1997; Ladd & Ladd, 1998), it is also predicted that the social communication difficulties experienced by children with autism spectrum disorders, as assessed by the social interaction and communication domain scores of the ADI-R, will be associated with bullying. In this way, the severity of bullying experienced is predicted to be greater for children who have more difficulties with social communication. Scores for the 'repetitive, restrictive and stereotyped behaviours' domain of the ADI-R, IQ and for receptive language ability are also predicted to be associated with increased bullying scores, in line with the previous studies reviewed above.

2) Are children with an autism spectrum disorder who attend a mainstream school more likely to experience peer friendship difficulties and bullying than those who attend a special educational needs school?

Given the difficulties that children with an autism spectrum disorder are known to experience in social interaction and communication, it is hypothesized that they will experience greater friendship difficulties within a mainstream school context, than those children who attend special needs schools. Within mainstream settings, the difficulties these children face are likely to be compounded by the relatively advanced social skills of their typically developing peers, as well as the social pressures to conform or 'fit in' with subtle and constantly changing group norms. By contrast, the more sheltered and supportive environment of a special needs school may allow children with an autism spectrum disorder to form friendships more easily.

Similarly, it is predicted that children with an autism spectrum disorder will be the target of greater exclusion, teasing and bullying by their mainstream peers, not only because of their difficulties with verbal and non-verbal communication, but also because of their lack of understanding of social rules and norms, and their unusual sensory and behavioural mannerisms, which may unwittingly draw the negative attention of their typically developing peers. Conversely, children attending special needs schools are predicted to report less bullying, since they are less likely to stand out as 'different' in a context where there is a wider range and greater acceptance of other children's unusual behaviour, and more loosely applied social norms.

METHOD

The present study was part of a large population study carried out between 2000 and 2004, to investigate the prevalence of autism spectrum disorders in a population cohort of children in South Thames (The Special Needs and Autism Project, Baird et al. 2006). The current study involves new coding and additional analysis of data collected as part of this study, which

was not included in the previous analysis.

Participants

Data were collected from 100 children (88 boys and 12 girls), with a diagnosis of autism spectrum disorder (including autism, pervasive developmental disorder, autism spectrum disorder and Asperger's syndrome). Data was taken from a database of children who had previously been recruited from the special needs register of child-health services as part of a large population based study investigating the prevalence of disorders of the autism spectrum in South Thames (Baird et al., 2006). The children were all aged between ten and twelve at the time of assessment, and were receiving full-time schooling within a mainstream or special educational needs setting. All 100 children were fluent in spoken English.

Ethics

The autism prevalence study from which the current study data originates received full ethical approval from the South Thames Medical Research Ethics Committee in June 2000 (see Appendix 1). For the purposes of the current study, clarification of the need for further ethical approval was sought, and confirmation was received that this was not required for the additional analysis of child data in the current study. As part of the original study, an explanatory information sheet was given to all children and families (Appendix 2), and full consent was sought for their participation in the study (Appendix 3).

Measures and Coding Procedures

Child Measures

Autism Diagnostic Observation Schedule-Generic (ADOS-G; Lord et al. 2000; Appendix 4).

All children had previously undergone a range of in-depth diagnostic and neurodevelopmental assessment measures, administered by the current researcher and colleagues. These included, as one of the core assessments of autism, a video-recorded interview using the Autism Diagnostic Observation Schedule: Generic, (ADOS-G) Module Three version. The ADOS is a widely used, standardised diagnostic assessment tool with well established validity, which uses semi-structured activities, questioning and conversation to assess the child's communication, reciprocal social interaction, play or imagination, stereotyped behaviours and restricted interests.

The ADOS consists of four modules which are designed to match individuals' expressive language ability and age. Module three of the assessment is intended for verbally fluent children who are able to produce a range of sentence types, and can use language to provide information about events out of the context of the immediate situation. In addition to a number of play-based tasks and activities, the template for the Module three interview involves the examiner asking about and providing prompts for the child to talk in some detail about their own experience and understanding of friendship, whether they have experienced difficulties getting along with other children at school, whether they have ever been teased or bullied, and their understanding of why this might be. For example, 'Do you ever have trouble getting on with other children at school?' and 'What does being a friend mean to you?'. As part of the earlier prevalence study (Baird et al., 2006), the information given by the child in this section, rather than being coded directly, was used to contribute to an overall score relating to the child's level of insight into typical social relationships, to be used in the autism diagnostic algorithm, as per the ADOS Instruction Manual (Western Psychological Services, 2001).

Bullying and Friendship Scales (Appendix 5). The information gathered in the ‘social relationships’ section of the ADOS interview was used to investigate a previously unexplored area of these children’s experience. Each of the one hundred video-recorded ADOS interviews was transcribed by the researcher, and then coded for friendship and bullying experience using two separate six point ordinal scales, developed by the researcher for the purposes of this study. Using these scales, the overall friendship experience of each child was assigned to one of six points along a scale, where zero represented greatest friendship difficulty (i.e. child unable to name any friends), and five represented most successful friendships.

The bullying experiences of each child were similarly coded, with a score of zero being assigned to children who reported never having experienced any form of bullying, teasing, exclusion or peer victimisation, and a score of five being given to those children who described having experienced frequent regular victimisation and bullying in the form of verbal teasing, physical aggression or a combination of these, deliberately directed towards them by their school peers.

All ADOS transcripts in this study were scored on both the friendship and bullying scales, by the principal researcher. Possible scores on each of the scales ranged from zero to five, with points in between representing well-defined degrees of the friendship and bullying variables. In the case of the friendship scale, low scores indicated less friendships and greater difficulty in this area, whereas higher scores indicated more established and successful mutual friendships. For example, a score of three was given when the child was able to ‘talk more specifically about one or more children at school with whom they shared play and other activities’ but where the friendship was ‘limited due to limited context and limited shared

activities'. The maximum score of five was given when the child was able to 'easily name or identify a best friend or confidante whom they see regularly both in and out of school, engaging in a range of reciprocal play-based activities where he or she is an equal participant'. This score necessitated that, when prompted, the child was able to 'show insight into the nature of his or her own friendships, and comment on the emotional as well as practical or proximal aspects of friendship'.

On the bullying scale, low scores indicated no, or very low levels of reported teasing or bullying, whereas high scores were associated with more severe physical and verbal teasing and victimisation. For example, a score of zero was assigned when there was 'no bullying or conflict reported', and a score of three was given when the child reported 'one of mild teasing or name calling over a limited time, e.g. when they had begun to attend a new school'. Finally, the maximum score of five was assigned when the child gave an account in which they described 'experiencing frequent victimisation and bullying in the form of verbal teasing and physical aggression deliberately directed towards them by other children at school'. Both scales are presented in full in Appendix 5, together with several examples of the scoring of individual child transcripts (Appendix 6).

Wechsler Intelligence Scale for Children (WISC-III-UK edition, Psychological Corporation, 1992). All one hundred children in the study had undergone IQ assessment using the Wechsler Intelligence Scale for Children (WISC-III-UK edition). This standardized assessment has well established validity as a measure of intellectual functioning in children (Kaufman, 1994). It comprises thirteen short subtests, providing a measure of verbal and non-verbal ability, as well as an overall full-scale IQ score. A score of seventy or below on the WISC-III is thought to indicate that the child has marked difficulties with learning, and

might therefore be described as having a learning disability.

British Picture Vocabulary Scale (BPVS - 2nd Edn.; Dunn, Dunn, Whetton & Burley, 1997).

In addition to standard IQ assessment, each child completed the British Picture Vocabulary Scale (BPVS - 2nd Edn.). The BPVS-II is a brief measure of receptive vocabulary for standard English, in which the child must point to pictures relating to increasingly complex words read out by the interviewer. Scores between 86 and 114 are considered to be within the normal range, whilst scores of 85 or lower are considered to be indicative of receptive language difficulties. Scores from the BPVS-II were recorded for each child in the study, to give an indication of the child's current level of receptive language.

Parent Measures

In addition to the use of child interview and assessment measures, data were collected from a number of parent interviews, which were conducted as part of the earlier autism prevalence study (Baird et al., 2006).

Autism Diagnostic Interview (ADI-R; Lord, Rutter & LeCouteur, 1994; Appendix 7). The Autism Diagnostic Interview-Revised (ADI-R, Lord, Rutter & LeCouteur, 1994) had previously been administered to parents of each of the children in the current study, to verify diagnosis and to provide additional information about each child's developmental and current histories. The ADI-R is a standardized investigator-based semi-structured interview, based upon the International Classification of Diseases (ICD-10; World Health Organisation, 1993) criteria for autism. The interview focuses on three main areas pertinent to the diagnosis of autism: reciprocal social interaction, communication and language; and repetitive, restrictive and stereotyped behaviours, asking parents to comment on their child's

characteristic autistic behaviour at present and at the age of four to five years.

As part of the earlier autism prevalence study (Baird et al. 2006), clinical material from the ADI was reviewed by three independent clinical investigators, together with other parent, child and teacher report data, in order to derive a clinical consensus of childhood autism or autism spectrum disorder in line with ICD-10 (World Health Organisation, 1993) criteria. A written summary of information from both the ADI-R and ADOS was considered alongside a vignette based on the researcher's own clinical impression of the child during the interview, as well as psychometric results and teacher report data. Evidence for the presence or absence of each ICD-10 symptom for autism was scored as 'definitely' or 'probably' present, and recorded. A total count of ICD-10 symptoms (Ranging from 0-12, including both 'probable' and 'definite' scores) was systematically completed as part of the diagnostic review process for each child. These consensus scores are used in the current study to provide a reliable indication of the overall degree of autistic symptomatology displayed by each child.

Child and Adolescent Psychiatric Assessment (CAPA; Angold et al. 1995; Appendix 8). The parents of all one hundred children in the current study had completed the Child and Adolescent Psychiatric Assessment (CAPA) as part of the earlier study. During this interview, which has well established validity within the field, parents are invited to comment on a number of aspects of their child's social development, including their peer relationships, friendships and experience of bullying. Within the friendships section of the interview, parents are asked about the age-appropriateness of their child's friends, the frequency of contact with friends, whether the child has a best friend and whether they have

a confidante amongst their peers, within the family or in an adult. Within the peer relationship difficulties section of the interview, parents are asked whether their child is teased or bullied, and then questioned about the frequency of bullying at home, at school and elsewhere. Responses for the majority of questions are scored on a three point scale, where zero indicates no difficulty, and two indicates the most difficulty (see Appendix 8). For questions relating to the frequency of an event, scoring relates to the number of occurrences of the specified behaviour or incident during the past three months.

For the purpose of obtaining parent information on the friendship and bullying experiences of children involved in the present study, the friendship and bullying data from the CAPA were extracted and used to form two composite scores: one relating to the parent's report of their child's difficulties with friendship, and one representing the parent's understanding of the level of bullying experienced by their child. Using the coding framework provided by the CAPA, individual item scores within the friendship section were computed to give a maximum score of fourteen, indicating the most difficulty with peer friendships, and a minimum score of zero, indicating no difficulties with friendships.

In order to calculate a composite bullying score, it was necessary to recode the CAPA scores relating to the frequency of bullying, so that the frequencies given could be coded along a three point scale, in a similar way to all of the previous questions. As such, a score of zero represented a bullying frequency of zero, a score of one was assigned to responses indicating a bullying frequency of less than ten incidents in the last three months, and finally a score of two was given to responses representing ten or more incidents of bullying in the last three months. Using this coding framework, the four individual parent report scores within the bullying section of the CAPA were computed to give a maximum score of eight, indicating

the most bullying, and a minimum score of zero, indicating no experience of bullying.

Teacher Measures

The Strengths and Difficulties Questionnaire - Teacher Edition (SDQ-T; Goodman, 1997; Appendix 9). In order to provide a more complete picture of each child's friendship and bullying experience, data was gathered from the previously administered teacher edition of the Strengths and Difficulties Questionnaire (SDQ-T). This standardized questionnaire, which was given to each child's current class teacher, asked teachers to rate the index child on a range of emotional and behavioural indices, including whether the child had 'at least one good friend' and whether they were 'picked on or bullied by other children'. Teachers were invited to rate the truth of each statement using a three point coding system, whereby zero represented 'not true', one represented 'somewhat true' and 2 meant that they felt the statement to be 'certainly true'. The scores for these two questions relating to friendship and bullying were extracted from each of the completed questionnaires for use in the current study.

Procedure

Data were collected for each of the children in the study in a number of different ways. Each child's video-recorded ADOS interview was transcribed and coded by the principal researcher, using the coding system described above. To ensure inter-rater reliability, a random sub-sample of thirty-two of the transcripts were coded independently by a research associate, who had been trained in the use of both scales. Inter-rater reliability was high for both friendship ($r = .889, p < .001$) and bullying scores ($r = .947, p < .001$). In a small number of cases, it was not possible to assign friendship or bullying scores, since the child's verbal account was too limited or ambiguous to allow for accurate scoring.

In addition, raw data was obtained from the previously administered diagnostic and psychometric assessments carried out as part of the earlier autism prevalence study (Baird et al., 2006). This included the WISC-III (n=100), BPVS (n=99), CAPA (n=90), ADI-R (n=100) and SDQ-T (n=86) as well as school placement information. The relevant data were extracted from the sub-sections of the CAPA and SDQ-T which were pertinent to the child's experience of friendship and bullying, and recoded, as described above. Since a small number of the original CAPA social relationships scores for children were missing, composite scores were calculated for eighty-eight of the one hundred children on the 'difficulties with friendship' scale, and for ninety children on the 'bullying' scale.

Statistical Analysis

Data were analysed using non-parametric statistical tests, since the friendship and bullying scales used all employed ordinal rather than interval scales, violating parametric assumptions. Non-parametric Spearman's rho correlations were conducted to explore the association between child-specific risk factors and friendship and bullying scores, whilst a Mann-Whitney U test was used to investigate whether there were differences between friendship and bullying scores in children attending mainstream and special educational needs schools.

RESULTS

Demographics

Of the 100 children (88 boys, 12 girls), 45 had received a clinical diagnosis of childhood autism, and 55 had an autism spectrum disorder. At the time of assessment, children were aged between 10 years 0 months and 12 years 8 months ($M = 11.4$ years, $SD = 0.7$). Sixty-three children in the sample were attending mainstream schools, whilst 37 attended special educational needs schools, including schools for children with moderate and severe learning disabilities and a number of specialist units for children with an autism spectrum disorder.

Descriptive Data

On the WISC-III, the group's mean full-scale IQ was 80.2 ($SD=20.1$), with verbal IQ ranging from 46 to 137 ($M= 82.5$, $SD=20.5$) and performance IQ from 49 to 135 ($M=82.3$, $SD=20.5$). Thirty-three children had a full-scale IQ below 70, with scores ranging between 45 and 69, whilst the remaining 67 children all scored 70 or above, with 30 in the range 70 - 84, 34 in the range 85 - 115, 3 in the range 116 - 130 and one full-scale IQ score of 136.

Scores on the British Picture Vocabulary Scales ranged from 43 to 137, with a mean of 89 ($SD=16.6$). Forty-four children scored 85 or below, indicating receptive language difficulties, whilst 45 children scored within the normal range (86 - 114). The remaining 11 children gained scores indicating above average receptive language ability (115-137).

Each child was given three ICD-10 clinical consensus scores based upon the three domain scores of the ADI, namely social interaction, communication and language; and repetitive, restrictive and stereotyped behaviours. Scores in each domain ranged from 0 to 4, with a score of 4 indicating most severe pathology, and 0 indicating the absence of difficulties in that area. Mean scores in each domain are summarised in Table 1.

Table 1.

Mean IQ, receptive language and autistic symptomatology for children attending mainstream and special needs schools

	Mainstream School		Special Needs School		<i>t</i> (df)	<i>p</i>
	M (N=63)	SD	Mean (N=37)	SD		
Full-Scale IQ	86.6	18.9	69.3	17.3	4.56(98)*	.0
					*	0
Receptive Language	93.9	13.5	82.0	18.7	3.68(97)*	.0
					*	0
Social Interaction	2.4	1.0	2.8	1.1	-1.90(98)	.0
						6
Communication	2.7	0.9	3.0	1.1	-1.56(98)	.1
						2
Repetitive Behaviour	2.2	1.1	2.7	1.0	-2.19(98)	.0
					*	3

* indicates correlation is significant at $p < 0.05$

** indicates correlation is significant at $p < 0.001$

As shown in Table 1, children attending mainstream school were found to have significantly higher IQ scores than those attending special schools ($t(98) = 4.56, p = .001$). Similarly, significant group differences were found on receptive language scores ($t(97) = 3.68, p = .001$), and restrictive and stereotyped behaviour ($t(98) = -2.19, p = .03$). There were no significant group differences on either social interaction or communication domain scores.

Prevalence of friendship and bullying difficulties

Scores from the peer relationships section of the parent report Child and Adolescent

Psychiatric Assessment (CAPA; Angold et al. 1995) were used to generate composite bullying and friendship difficulties scores for each child (as described above). High scores in either of the two areas indicated greater difficulty in that area. Scores ranged from 0 to 14 for friendship difficulties ($M = 7.0$, $SD = 3.2$), with 32 percent scoring five or below, 53 percent scoring between six and ten, and 15 percent showing scores of 11 or higher. Scores ranged from zero to six for children's experience of bullying ($M = 1.9$, $SD=2.1$), with 43 parents (48 percent) reporting that their child experienced some form of bullying or peer victimisation. Due to missing data, it was not possible to generate composite scores for all 100 children, thus friendship scores were calculated for a total of 88 children, and bullying scores for 90 children.

Scores from the teacher measure, the SDQ-T, were gathered for 85 children. In the case of the friendship question, which asked teachers to comment on whether the child had 'at least one good friend', teachers scores indicated that this was 'certainly true' for over half of children (55 percent), whilst it was 'somewhat true' for 16.5 percent of children. Twenty-four percent of children were thought not to have at least one good friend. With regard to bullying difficulties, teachers reported that over half of children (57 percent) were not picked on or bullied at all by other children, whilst it was 'somewhat true' that a further 31 percent of children were picked on or bullied whilst at school. Finally, scores indicated that 11.6 percent of children were definitely picked on or bullied by their peers.

Children's own accounts of their friendship and bullying experiences at school, transcribed from sections of the ADOS interview, were scored using the friendship and bullying scales devised for the present study, both of which ranged from 0 to 5. In the case of the friendship scale, a score of 0 was given when the child was unable to show evidence of any current friendships or close peer relationships, and a score of five indicated that the child had a

definite best friend. Conversely, low scores on the bullying scale indicated less difficulty, whereas a score of five was given in cases where the child reported extreme physical and verbal bullying and victimisation. In eleven cases, it was not possible to assign scores for either friendship or bullying, since the child's responses to the prompts provided in the interview provided ambiguous or too little information to be reliably coded. The scores, summarised in Table 2 below, showed that 85 (96 percent) children with autism spectrum disorder described having some degree of individual or group friendship with their peers at school. Conversely, three-quarters of the group (75 percent) had experienced teasing, bullying, exclusion or conflict with other children.

Table 2.
Children's scores on child report friendship and bullying scales

Score	Friendship Scores	
	Frequency (N=89*)	Percent
0 Child has no friends	4	4.5
1	17	19.1
2	26	29.2
3	24	27.0
4	13	14.6
5 Child has definite best friend	5	5.6
M	2.45	
SD	1.24	
Score	Bullying Scores	
	Frequency (N=89*)	Percent
0 Child is not teased or bullied	22	24.7
1	16	18.0
2	14	15.7
3	18	20.2
4	13	14.6
5 Child is physically & verbally bullied	6	6.7
M	2.02	
SD	1.61	

* It was not possible to score 11 of the child transcripts

In terms of friendship scores, a negative association was found between parent reports of their child's difficulty with friendships and teacher reports that the child had 'at least one good friend'. However, interestingly, child scores were not found to be correlated with either parent or teacher measures (see Table 3). On measures of bullying, positive

correlations were found between child and parent ratings, child and teacher ratings, and between reports given by parents and teachers. In addition, there was a negative association between the two teacher items, suggesting that children with at least one good friend were less likely to be picked on or teased by other children.

Table 3.
Spearman's correlations between child, parent and teacher measures of friendship and bullying

	Child F	Parent F diff.	Teacher F	Child B	Parent B	Teacher B
Child F	1.000	-.197	.208	.080	.131	-.011
<i>p</i>	-	(.079)	(.071)	(.455)	(.242)	(.925)
Parent F	-.197	1.000	-.258*	-.124	-.071	-.126
Diff <i>p</i>	(.079)	-	(.026)	(.275)	(.527)	(.282)
Teacher F	.208	-.258*	1.000	-.129	-.097	-.290**
<i>p</i>	(.071)	(.026)	-	(.266)	(.406)	(.007)
Child B	.080	-.124	-.129	1.000	.272*	.264*
<i>p</i>	(.455)	(.275)	(.266)	-	(.014)	(.020)
Parent B	.131	-.071	-.097	.272*	1.000	.271*
<i>p</i>	(.242)	(.527)	(.406)	(.014)	-	(.017)
Teacher B	-.011	-.126	-.290**	.264*	.271*	1.000
<i>p</i>	(.925)	(.282)	(.007)	(.020)	(.017)	-

Note: Some missing data, therefore N's ranged from 74 - 89

* indicates correlation is significant at $p < .05$ (two-tailed)

** indicates correlation is significant at $p < .01$ (two-tailed)

Research Question 1: How are friendship difficulties and bullying in children with an autism spectrum disorder related to their autistic symptomatology, IQ and receptive language?

Friendship Difficulties

To address the first research question, a non-parametric Spearman's rho correlation was performed using child, parent and teacher measures of friendship. Table 4 presents the

pattern of correlations. A positive correlation was found between children's full-scale IQ scores and scores on the child friendship rating scale, whilst parent reports of their child's friendship difficulties were found to be negatively correlated with IQ. Thus, children with higher overall intellectual functioning were more likely to have successful friendships than children with a lower IQ. Interestingly, however, teacher reports of children's friendships were not found to be significantly correlated with IQ. Similarly, children's BPVS receptive language scores were not correlated with any of the three child, parent or teacher report friendship measures, suggesting that receptive language did not play an important role in the formation of friendships within this group of children.

Table 4.
Spearman's correlations between child, parent and teacher friendship scores and child IQ, receptive language and autistic symptomatology

		FS IQ	BPVS	Social Interaction	Comm .	Rep.
Child	r_s	.252*	.198	-.345**	-.175	-.254*
	p	(.018)	(.064)	(.001)	(.100)	(.016)
Parent F difficulties	r_s	-.236 *	-.095	.341**	.117	.259*
	p	(.027)	(.379)	(.001)	(.277)	(.015)
Teacher	r_s	.103	.076	-.130	.063	-.012
	p	(.350)	(.492)	(.234)	(.566)	(.916)

Note: Some data missing, therefore N's ranged from 84 to 89

* indicates correlation is significant at $p < 0.05$ (two-tailed)

** indicates correlation is significant at $p < 0.01$ (two-tailed)

In terms of the association between children's friendship difficulties and autistic symptomatology, Table 4 shows a significant relationship between child friendship scores and Social Interaction domain scores for ICD-10 autism symptoms, with children with less

impaired social interaction reporting more successful peer friendships, and a higher incidence of friendship difficulties being reported by parents of children with more social interaction difficulties.

Similarly, ICD-10 scores for repetitive, restrictive and stereotyped behaviours were found to be negatively correlated with children's friendship scores, and positively correlated with parent reports of friendship difficulties. Of interest was the observation that no significant associations were found between any of the child variables and teacher reports of friendship, perhaps suggestive of the fact that teachers are less reliable informants than either parents or children. No significant relationship was found between any of the three friendship measures and children's ICD-10 communication and language domain scores, suggesting that ability in this area is less important to the formation and maintenance of peer friendships than social interaction ability and levels of repetitive or stereotyped behaviour.

Bullying

Scores on child, parent and teacher measures of peer bullying were compared with children's IQ, receptive language and autistic symptomatology using a Spearman's rho correlation. As seen in Table 5, no significant associations were found between children's experience of bullying and IQ score. A Mann-Whitney U test was performed to investigate whether any difference could be seen between the bullying experiences of children with a low IQ (< 70) and those with an IQ in the normal to high range (≥ 70), however the test failed to show any significant differences, suggesting that children with low and high IQ scores experience similar levels of bullying. Similarly, children's receptive language scores were not found to be significantly correlated with child, parent or teacher measures of bullying.

Table 5.

Spearman's correlations between child, parent and teacher bullying scores and child IQ, receptive language and autistic symptomatology

		FS IQ	BPVS	Social Interaction	Comm	Rep.
Child	r_s	.097	-.022	-.225*	-.036	-.138
	p	(.368)	(.836)	(.034)	(.738)	(.196)
Parent	r_s	.101	.043	-.251*	-.153	-.099
	p	(.346)	(.686)	(.017)	(.150)	(.355)
Teacher	r_s	.093	.058	-.128	-.144	-.109
	p	(.397)	(.599)	(.241)	(.185)	(.320)

Note: N's ranged from 85 to 90

* indicates correlation is significant at $p < 0.05$ (two-tailed)

Interestingly, regarding child autism symptomatology, Spearman's rho correlations indicated a significant negative relationship between children's own account of their bullying experience and scores within the Reciprocal Social Interaction domain ($r_s = -.225, p = .034$), suggesting that children with greater ability in terms of social interaction experience more frequent and severe bullying than those who are more socially impaired. This result is further supported by the correlation between parent reports of their child's experience of bullying and Social Interaction domain scores ($r_s = -.251, p = .017$).

Given that this result was somewhat different from earlier predictions, the correlations were re-run, including only children attending mainstream schools ($N = 63$), since it was hypothesised that these children may be likely to experience greater bullying. However, this made little difference to the correlation, once again suggesting a significant relationship between higher levels of bullying in mainstream children with greater social interaction ability, according to both child report ($r_s = -.259, p = .050$), and teacher report measures (r_s

= -.305, $p = .026$). No significant relationship was identified between either ICD-10 domain scores for communication and language or those for repetitive, restrictive and stereotyped behaviours, and scores on child, parent and teacher bullying measures.

Research Question 2

Are children with an autism spectrum disorder who attend a mainstream school more likely to experience peer friendship difficulties and bullying than those who attend a special educational needs school?

Friendship Difficulties

The relationship between friendship difficulties and school placement was investigated using a Mann-Whitney U test, selected as the most suitable statistic given the non-parametric qualities of the ordinal friendship scales used. The test results, summarised in Table 6, revealed no significant differences between the level of friendship difficulties experienced by children attending mainstream schools and those at special school. Interestingly, on closer examination, the test results show a trend suggesting that children attending special needs schools experience slightly greater difficulty forming and maintaining friendships than those in mainstream schools, however this finding does not reach the level of statistical significance.

Table 6.
Mean scores and group differences on measures of friendship in mainstream and special needs schools

	Mainstream School		Special Needs School		<i>U</i>	<i>Z</i> score
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Child Report	2.47	1.27	2.42	1.21	873.0	-.23
Parent Report of F difficulties	6.51	2.91	8.00	3.38	677.0	-1.81
Teacher Report	1.37	.84	1.12	.93	738.0	-1.20

Bullying Difficulties

The relationship between school placement and children's experience of bullying was similarly investigated using a Mann-Whitney U test, reported in Table 7. Whilst mean bullying scores were higher for children attending mainstream schools on all three measures, no significant differences were found between the level of bullying experienced by children attending mainstream school and those in special needs schools.

Table 7.
Mean scores and group differences on measures of bullying in mainstream and special needs schools

	Mainstream School		Special Needs School		<i>U</i>	<i>Z</i> score
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Child Report	2.12	1.61	1.84	1.61	812.5	-.76
Parent Report	2.05	2.10	1.53	2.08	811.0	-1.28
Teacher Report	.60	.69	.45	.71	756.0	-1.19

DISCUSSION

The current study provided an opportunity to explore the friendship and bullying experiences of children with an autism spectrum disorder, using information from parents and teachers, as well as from children themselves, to gain a novel insight into their everyday social experiences. The following discussion provides an opportunity to reflect on issues of reliability and validity with regard to the child-report measures devised to gather information on children's friendship and bullying experiences, as well as to examine the study findings in relation to each of the research questions, before considering the limitations of the present study and exploring the scientific and professional implications for future research and clinical work in this field.

As with all new measures, the design of two new scales to measure children's own experiences of friendship and bullying at school carried several implications in terms of reliability and validity. In order to address some of these issues, care was taken to identify important aspects of each construct from the literature, as well as from existing, standardized measures such as the Child and Adolescent Psychiatric Assessment (Angold et al., 1995), to include in the new friendship and bullying scales. In addition, inter-rater reliability checks were put in place, to ensure the reliability of individual child ratings. On reflection, further validity checks would have allowed for a greater degree of confidence in the use of the new friendship and bullying scales. For example, the concurrent use of additional standardized measures with well established validity, such as the Friendship Qualities Scale (Bukowski, Boivin & Hoza, 1994), would have provided an opportunity to examine how well the two new measures correlated with existing measures of these constructs.

In terms of the study data, although almost all of the children had experienced some degree

of friendship with their peers at school, over half of parents reported that their child found it hard to develop and maintain friendships, having less 'best friend' relationships and spending less time seeing friends outside of the school context. This finding is consistent with a number of other studies which report that, whilst friendship is a real experience for the majority of children with an autism spectrum disorder, it remains a major area of difficulty (Bauminger & Kasari, 2000; Bauminger & Shulman, 2003), characterised by less frequent social interaction and fewer close friendships than are seen within a typically developing population (Wainscot et al., 2008).

According to both parents and teachers, just under half of all children had experienced bullying at school. Similar levels have been reported in the literature, with a recent parent survey conducted by the National Autistic Society (NAS, 2006) finding that two in five children with autism had experienced some form of bullying. Notably, three-quarters of children in the current study reported having experienced some degree of teasing, bullying or exclusion by their school peers. This figure is, perhaps understandably, somewhat higher than that reported by parents and teachers, since it seems likely children may experience a degree of low-level bullying and social exclusion which evades their detection. However, other studies have also reported a high incidence (e.g. Little, 2002 and Wainscot et al., 2008, both report a bullying incidence of around 90 percent), more in line with the experiences reported by the children in the current study. This finding points to the importance of asking children about their own experiences, since it seems that, in asking only parents or teachers, valuable information may be lost.

Children's friendship experiences were related to IQ, with children with a lower full-scale IQ experiencing greater difficulty in forming and maintaining friendships than their more

cognitively able peers. This corroborates the conceptualisation of friendship difficulties amongst children as arising from specific cognitive deficits associated with the child's inability to understand others' thoughts, or to engage in complex social information processing (Bauminger & Kasari, 2000), meaning that children with lower intellectual ability are likely to have greater difficulty accessing and making sense of different social situations, whilst children who have less impaired intellectual ability may be able to engage in more advanced levels of social relationships. This observation is replicated in other research examining friendships among children with developmental disabilities (Matheson, Olsen & Weisner, 2007; Wiener & Sunohara, 1998; Zetlin & Murtaugh, 1988).

Regarding children's autistic symptomatology, the ability to form and maintain friendships was associated with both reciprocal social interaction and repetitive and stereotyped behaviour, with children with higher levels of impairment experiencing greater difficulty. The centrality of social interaction in the development and maintenance of peer relationships, and the associated social deficit in children with autism, has been well documented (e.g. Knott, Dunlop & Mackay, 2006; Orsmond, Krauss & Seltzer, 2004). The literature suggests that children with greater social impairment may face more of a struggle when relating to their peers, showing less interest and socio-emotional reciprocity and engaging in fewer social interactions during the school day, with the result that they have fewer friendships and are more socially excluded than children with more well-developed social skills.

Less well documented in the research literature is the impact of greater levels of restricted, repetitive and stereotyped behaviour on children's ability to form friendships (see Granizo et al., 2006). The study findings supported initial predictions that children with higher levels

of observable ‘odd’ behaviours, as well as those with intense, inflexible preoccupations would be less well accepted by their same-age peers. In practice, such behaviour may increase the risk of social exclusion, not only because the child’s narrow and often somewhat unusual focus of interest makes it hard for other children to become interested or involved, but also because, at an age when peer-group acceptance is of paramount importance, such children simply do not ‘fit in’ with subtle peer group norms.

Surprisingly, the current findings failed to support the hypothesis that children’s communication and language ability were related to friendship success. One explanation for this may be that children who have more difficulty in these areas are able to develop compensatory mechanisms through their preserved skills in social interaction, which allow them to develop and sustain social relationships. An alternative view is that they may be involved in friendships with more able children, who can provide the social scaffolding necessary to maintain the relationship, or have friendships characterised by a shared interest, such as playing on the computer, which places fewer demands on their ability to engage in unstructured social exchange (e.g. Bauminger & Shulman, 2003).

In interpreting these results, it is important to note that, due to the number of children in the sample, the current study had the power to detect both large ($r > .5$) and medium ($r = .3$ to $r = .5$) correlations at least 80 per cent of the time. However, the sample size did not allow for the detection of smaller correlations. As such, it is not possible to draw the conclusion that there was no association between children’s level of communication impairment and their friendship success, or likewise between receptive language and friendship, as it is possible that a correlation did exist, but that this was too small to detect with the current sample size. Further study, using a larger sample of children, would allow for more robust interpretation of these findings.

In contrast with other studies (e.g. Little, 2002), the incidence of bullying in children with an autism spectrum disorder was not associated with IQ. This is an interesting result, given the increased incidence of friendship difficulties in children with lower intellectual ability, as it suggests that the factors which make some children more vulnerable to peer bullying may not be related to those which contribute to peer friendship difficulties. In particular, it seems that higher IQ does not necessarily serve a protective function for these children, who may experience bullying and exclusion regardless of their cognitive ability.

Similarly, neither communication nor receptive language ability were found to be associated with bullying, suggesting that there are factors other than language which increase children's vulnerability to bullying. As before, this may be because children with particular difficulties in these areas are able to use compensatory strategies to minimise the extent to which their social relationships are affected. Alternatively, it may reflect the effect of two different processes, in that children with lower levels of communication and receptive language ability may under-report their experiences of bullying due to their restricted communication, giving the impression of similar levels of bullying to children with greater ability, and consequently masking the protective effects afforded by more advanced communication and receptive language skills.

Perhaps the most surprising finding is that children with less impaired reciprocal social interaction experienced more frequent and severe bullying than those with higher levels of social impairment. This is in contrast with the protective function apparently served by less impaired social interaction in the development and maintenance of peer friendships. One possible explanation is that children with less impaired social ability may be attuned to subtle, more sophisticated forms of bullying and peer exclusion, and therefore tend to notice

and report higher levels of bullying. An alternative view is that children with greater levels of social skills are likely to be more socially involved with their peers, and engage in social interactions with other children more frequently, thus facing an increased likelihood of negative social experiences such as teasing and bullying. This explanation is supported by several studies, which suggest that children with more impaired social ability may intentionally avoid social contact during break and lunch times, preferring to stay within supervised or quieter areas of the school, with the result that they not only minimise the risk of encountering socially demanding situations, but also reduce their risk of being targeted by bullies (e.g. Granizo et al., 2006; Wainscot et al., 2008).

Of the three child, parent and teacher measures of friendship and bullying, teacher's scores were not found to correlate with any of the child-specific variables. This may suggest that teachers are less able to reliably comment on children's peer relationship difficulties, despite being in a potentially valuable position to directly observe their interactions, perhaps because much of the social interaction between school peers occurs in the absence of close teacher supervision, for example during break times. Alternatively, this finding may simply be a result of the somewhat general measure used, which offered little opportunity for teachers to reflect more fully on children's friendship and bullying experience.

The finding that children experienced similar levels of bullying and friendship difficulties, regardless of their school placement, challenged the initial hypothesis that children within mainstream school settings would be more likely to experience greater peer relationship difficulties than those attending special needs schools. One possible explanation is that the individual characteristics of children attending mainstream and special needs schools may themselves influence the environments provided by different school settings. Thus, whilst

seeming to provide the structure and nurturing support needed by some children with learning and developmental disabilities, special needs schools may equally accommodate children who are unable to attend mainstream school due to challenging, aggressive or disruptive behaviour. Such children may be likely to experience greater difficulties in forming relationships with their peers, whilst also providing a difficult and somewhat anxiety-provoking social context for other children keen to form friendships. Moreover, they may be in an ideal position to tease and bully other children at school, whom they perceive to be 'easy targets'.

Interestingly, whilst no significant differences were found between school settings in terms of children's experience of friendship difficulties, there was a trend suggesting that children attending special needs schools experienced slightly greater difficulty in forming and maintaining friendships. Once again, this result is surprising, since it was predicted that children placed with other children of a similar level of social and cognitive ability would form friendships, and be more accepted by their peers, than children exposed to the complex social demands of a mainstream school. One explanation may be the confounding effect of children's IQ, which was lower in the special needs school group. Since cognitive ability is thought to play an important role in the ability to form friendships (e.g. Bauminger & Kasari, 2000), this may explain why children in special needs schools reported greater difficulties.

An alternative perspective, confirmed by the findings of Wooten and Mesibov (1986), suggests that interactions with typically developing children within mainstream settings are helpful in scaffolding and stimulating more appropriate social interactions amongst children with an autism spectrum disorder. If this is the case, then it may be that children with ASD attending mainstream schools are able to benefit from the more advanced social skills of

their typically developing peers, who, by providing greater levels of structure and support within social interactions, facilitate the development and continuation of friendship. However, further studies are needed to test this hypothesis.

Limitations

All of the data used in the current study was extracted and re-coded from measures completed as part of an earlier, large-scale autism prevalence study (Baird et al., 2006). However, since the information obtained during this earlier research was gathered primarily for diagnostic purposes, the depth of information relating to children's friendship and bullying experiences was somewhat restricted by the measures used, and, in the case of the child ADOS assessment, by the prompts and level of detail requested by the interviewer at the time of assessment.

With regard to coding procedures, parent and teacher information was extracted from the relevant sections of two standardized and well validated measures, the CAPA and the SDQ-T, whereas measures of children's own experience of friendship and bullying relied upon the use of two new scales, developed specifically for this study. Although inter-rater reliability, content and face validity for both scales were found to be high, further replication would ideally be suggested.

In this study, as with other research using self-report and interview measures, the process of obtaining accounts directly from child participants provided important information. However, this also sometimes made it difficult to clearly distinguish between children who were giving what they felt was the desirable or 'correct' response, and those who were reporting their experiences accurately (Capps, Sigman & Yirmiya, 1995). Similarly, it was

not possible to test out children's reports regarding the dyadic nature of nominated 'best friend' relationships, therefore scoring of children's accounts was restricted to impressionistic, face-value coding of the material available.

Finally, children in the current study were selected on the basis of their fluent conversation skills. Whilst this made it possible to gain a greater level of detail about children's experiences than would otherwise have been achieved, it also means that the findings reported can be extended only to children with a similar profile of strengths and difficulties. Further investigation, using measures more appropriate for children with a wider range of language ability, would enable these findings to be extended beyond the immediate population.

Implications and Future Research Directions

This multi-informant study contributes a unique perspective to our understanding of the difficulties experienced by children with an autism spectrum disorder in forming and maintaining meaningful friendships, as well as the bullying and victimisation they face during their time at school. The study highlights several child-specific factors which serve to make particular children with ASD more vulnerable to friendship difficulties and bullying, and dispels the notion that children within special needs environments are in some way protected from the social difficulties faced by children attending mainstream schools.

The study identified IQ, level of social interaction and level of restricted and stereotyped behaviour as risk factors for experiencing greater friendship difficulties. However, further research is needed to explore the specific elements of these domains which play a role in the child's ability to form friendships, and the extent to which these factors predict friendship

and relationship difficulties in later adolescence and adulthood. Similarly, intervention studies would be useful in investigating effective ways to facilitate the development of friendship in children with an autism spectrum disorder.

In exploring the risk factors for bullying in this group, the current study found an unexpected association between lower levels of impairment in social interaction and increased risk of bullying. This is an interesting finding, and one which warrants further exploration, since it may suggest that the subgroup of ‘active-but-odd’ autistic children who actively attempt to participate in peer activities, face more of a bullying risk than those who are more aloof and withdrawn. If this is the case, then it highlights the need for greater provision of social skills training amongst this group, to enable them to become involved with peers, without facing the risk of bullying and victimisation.

The study findings point to the importance of clinical and school-based interventions tailored to the social needs of children with an autism spectrum disorder, both within special educational and mainstream school settings. Whilst interventions on an individual level may usefully contribute to the development of social skills and understanding in children with an autism spectrum disorder, future research and interventions should also examine the role that both teachers and parents might play in facilitating friendship formation and supporting ongoing peer relationships. In tackling the problem of bullying and social exclusion, a future direction might be more widespread implementation of school-based anti-bullying schemes, including peer support and mentoring programmes, as well as more specialist training for parents and professionals working with children within this vulnerable population.

Part 3: Critical Appraisal

CRITICAL APPRAISAL

Introduction

The process of conducting this study raised a number of interesting issues and challenges. This paper will focus initially on the background and context of the study, as well as challenges arising at the planning stage of the project. Observations made during the process of collecting the child data will be considered. The study findings will then be addressed within the context of wider clinical and theoretical perspectives, before outlining possible directions for future work in this field.

Background to the Research

My interest in exploring the friendship and bullying experiences of children and young people with an autism spectrum disorder arose whilst conducting individual child assessments as part of a large autism prevalence study (Baird et al., 2006), which provided the raw data for the present study. During ADOS diagnostic interviews, I was frequently struck by the difficulties these children reported in forming and maintaining peer friendships, despite, in some cases, a very real motivation to be involved and accepted as 'one of the group'. Moreover, when asked about the social difficulties they experienced, many children reported having experienced teasing, bullying and social exclusion, in some cases for prolonged periods of time, with serious consequences, both in terms of school attendance, and the lasting emotional impact upon the child.

Similarly, when asked about their concerns for their child, parents frequently identified peer relationships, and the socially demanding transition from primary to secondary school as a major area of ongoing difficulty. Not only did they see their child's difficulties as preventing them from forming important peer friendships, but also, in being excluded from

their peers' social circles, they also felt that their child was missing out on an important opportunity to practice and gain confidence in their own social skills.

An informal search of the literature revealed that, whilst there was a large body of research focusing upon interventions to improve the social ability of children with autism, very few studies had attempted to capture and describe the everyday social experiences of these children, and particularly the difficulties experienced in forming friendships and being accepted by their same-age peers. Those studies available tended to be small-scale case studies, or those relying upon parent impressions, rather than the views of children themselves. The current study sought to address this issue, using child, parent and teacher reports to develop a more holistic understanding of this group's everyday social experience.

Planning the Study

At the planning stage of this study, a number of issues presented themselves. Firstly, given that a large body of information regarding children's experiences of friendship and bullying had already been collected as a by-product of the earlier autism prevalence study (Baird et al., 2006), it was decided that this data would be extracted retrospectively from the various different child, parent and teacher measures, and then re-coded for the current study, to provide a useful measure of children's experience.

In order to maximise the detail and quality of information collected for each child, the decision was made to include only children who had completed the Module three version of the Autism Diagnostic Observation Schedule (ADOS), and whose parents had completed the parent report CAPA assessment. This not only ensured that all of the children had a fluent level of spoken language, and were able to understand and give as full a response as possible to the questions asked, but also, since both the CAPA and Module three ADOS

included specific questions about peer friendships and bullying, it provided an ideal opportunity to collect the data that was particularly relevant to the research questions. These inclusion criteria were met by one hundred children with an autism spectrum diagnosis, a group size which was considered large enough to demonstrate a sizeable effect, if present.

The decision to use archival data carried several implications. Firstly, the current research design was limited to using the definitions of friendship and bullying adopted by the different child, parent and teacher measures. As a result, it was not possible to choose specific aspects of these constructs to examine in more detail. Moreover, given that the original purpose of each measure was primarily to inform autism diagnosis, there was great variability in the extent to which the areas of friendship and bullying were explored. Similarly, the level of detail derived from the ADOS, a semi-structured child interview, was constrained by the questions, prompts and directions taken by the original interviewer, as well as by the level of detail given by the child respondent. It was therefore necessary to explore a variety of different approaches to data collection and coding, in order to capture as much of the content and detail of children's everyday social experience as possible.

Designing a Friendship and Bullying Scale

Whilst both of the original parent and teacher response measures (the CAPA and SDQ-T) presented child peer relationship data in numeric form, which allowed for easy translation into composite friendship and bullying scores, it was necessary to develop a new measure in order to code the videotaped child ADOS material in a similar, quantitative format. With this in mind, two separate scales, measuring children's experiences of friendship and bullying, were designed and piloted on a small sample of ADOS transcripts. This form of measurement was considered to be most appropriate, as it not only matched the format of both parent and teacher scores, but it also provided a way of separating out children's

experiences, so that they could be scored along a continuum of differing levels of friendship, and degrees of bullying, to accurately reflect the range of responses given.

Several different scale designs were initially piloted, the first of which sought to break down the constructs of friendship and bullying into smaller behavioural markers. For example, in the case of friendship scores, points were awarded in relation to the frequency of contact with peers, and the number of shared activities identified by the child during the interview. Whilst this scale seemed to have good face validity, and was certainly able to capture the behavioural aspects of each child's experience, it missed crucial qualitative differences apparent in the original videotaped interviews. For instance, using this scale, a child who reported regular participation in peer-mediated play activities, but described his participation as being dependent on whether the other children would let him play, or were speaking to him on that day, would have been assigned the same activity score as a child who described engaging in a similar number of play activities, but as a central, well-liked figure in his peer group: thus disregarding the sense that the second child clearly had more qualitatively successful friendships than the first.

The final design of both the friendship and bullying measures sought to address this difficulty, using two six-point scales, along which were anchored detailed descriptions of the behavioural, emotional and qualitative aspects of friendship or bullying, appropriate to each level of the scale. These descriptions not only allowed for the identification of differing levels of observable friendship or bullying behaviour, but also gave credence to a more impressionistic sense of the quality of each child's experience. For example, a score of one on the friendship scale was characterised in the following way: The "child is able to talk generally about a friendship group at school to which he/she affiliates themselves. However,

it is clear from the child's description that their relationships are lacking reciprocity / mutuality. The child is not seen by his or her peers as a true 'member' of the group, but will join in with some limited group activities."

To ensure reliability, the scale was initially piloted by myself, both research supervisors involved in the study, and an independent rater, who was familiar with the administration of the ADOS. Videotaped extracts from a number of ADOS interviews were watched, alongside written transcripts of each interview, and a score given for each child's friendship and bullying experience. Scores tended to be very similar across all researchers, occasionally differing by one point in either direction. On the basis of this consistency, a second, more extensive pilot of 30 child interviews was conducted by the independent rater, following a brief training session to gain familiarity with the two scales. As reported in the empirical paper, inter-rater reliability was found to be high, suggesting that the scales provided a useful and valid measure of children's real life experiences of friendship and bullying.

Child Data Collection

The process of collecting and coding the child data brought to light a number of considerations. In terms of child report scores, it was clear that, although all of the children in the study had fluent verbal skills, individual levels of engagement and the quality of rapport established between the child and interviewer varied considerably. As a result, some children were able to talk quite extensively about their peer relationship experiences, giving a great amount of detail and insight, whilst others offered a minimal amount of information. Moreover, where children had experienced a history of bullying and social exclusion, the interview sometimes seemed to evoke such discomfort that they found it difficult to

elaborate on their experience.

The lack of detail given in some interviews meant that it was at times difficult to ensure that scores were a true reflection of the child's actual experience, and in a small number of cases meant that the child's responses were unscorable. It was hoped that, by introducing an impressionistic element to both the friendship and bullying scales, the verbal information given by each child, which was taken at face value, would be considered alongside an overarching sense of the quality of their peer relationships. In practice, this approach seemed to capture more fully the individual experience of each child, whilst also standing up to the challenge of inter-rater reliability checks.

Study Findings

Analysis of the research data produced some interesting findings, promoting thought, and challenging my initial assumptions and understanding of the experiences of this group of children. In terms of children's peer relationships, the data seemed to support the notion that IQ and level of social interaction ability are related to friendship success. This finding was in keeping with previous research (e.g. Matheson, Olsen & Weisner, 2007), as well as my own clinical observations, that children with greater intellectual impairment, and likewise those with less advanced social skills, tend to be less involved with their peers, and have less successful friendship relationships. Similarly, the association between more successful friendships and lower levels of repetitive and stereotyped behaviour seemed to support the notion that children with greater levels of observable 'odd' behaviour tend to be less well accepted by their peers, and consequently may find it more difficult to form friendships (e.g. Granizo et al., 2006).

It was interesting to discover that the same difficulties experienced by children in forming friendships, were not also related to children's experience of bullying, thus suggesting that success in friendship is not necessarily predictive of greater immunity to bullying and peer victimisation. In fact, in this study it seemed that the reverse was true: children with less severe social interaction difficulties appeared to experience greater levels of bullying. As discussed in the empirical paper, this may perhaps be due to the fact that children with less social impairment are likely to be more socially involved and engaged with their peers, and consequently are exposed to both the positive and the negative sides of peer group involvement more frequently than children who show more withdrawn behaviour (e.g. Wainscot et al., 2008). Moreover, these pro-social children may, due to their poor mentalising ability and conflict resolution skills, be more likely to find themselves in difficult social situations, within which peer confrontation and conflict are more likely. Future research could usefully be directed towards a more detailed exploration of this finding, perhaps using observational methods to identify the social behaviours which seem to increase the bullying risk in this group of children.

An interesting finding with regard to the reported prevalence of bullying, teasing and social exclusion amongst children with an autism spectrum disorder was the difference between the high incidence of difficulties reported by children, and the somewhat lower incidence reported by parents and teachers. This finding clearly highlighted the value of asking children themselves about their experiences, since it seemed that parents, and particularly teachers, were less aware of the difficulties these children may face at school. Interestingly, much of the existing research within this field uses parent report to inform our knowledge of children's social experience. This study challenges the utility of these methods, since it seems likely that parents may unwittingly underestimate the difficulties their children

experience with bullying and peer victimisation. Future research within this field may therefore benefit from a more holistic multi-informant design, such as that used in the current study.

The second research question addressed in the current study, which examined the differences between the friendship and bullying experiences of children attending mainstream and special needs schools, yielded results which I felt challenged not only my own preconceptions, but also popularly held beliefs about the social advantage and protection offered to children with autism spectrum difficulties within a special needs environment. In the case of both friendship and bullying experiences, the study failed to show any significant effect of school environment, suggesting that children experienced similar levels of difficulty, regardless of the type of school they attended.

On reflection, there are a number of important methodological issues and limitations to consider in explaining this unexpected finding. Most crucially, the mainstream and special needs groups had a number of different characteristics, aside from their schooling, which may have had a confounding effect on the findings of this second research question. For example, children in the special needs school group had a significantly lower average IQ than those in the mainstream group. Similarly, these children had significantly lower receptive language ability and displayed higher levels of repetitive behaviour than their mainstream peers. Since we know, from the study data from research question one, that IQ and level of repetitive behaviour are associated with greater levels of friendship difficulty and, in the case of IQ, higher levels of bullying, it is clearly problematic to infer that any differences between the two groups were due to school placement alone.

One way of addressing this issue would have been to investigate a smaller sub-group of children within mainstream and special educational needs schools, who were matched on important variables such as IQ, age, receptive language and autistic symptomatology, thus minimising the risk of confounds. In this way, any differences between the two groups may have been interpreted more confidently as being as a result of school placement.

Alternatively, it may have been preferable to employ a statistical procedure which examined the percentage of variation in children's friendship and bullying scores which could be accounted for by school placement, whilst controlling for the effects of other key variables, rather than simply looking for differences between the two groups. This could be achieved by using a multiple regression, which would allow for a number of different predictor variables to be included in the analysis. In this way, the percentage of variation in children's friendship and bullying scores accounted for by school placement could be seen alongside the percentage accounted for by other variables, such as IQ, receptive language etc., thus giving a more accurate representation of the relative importance of school placement in determining children's risk of friendship difficulties and bullying.

Nevertheless, the findings from previous research support the notion that children within mainstream schools may be at a social advantage to those attending special needs schools. Wooten and Mesibiv (1986), suggest that children with autism spectrum difficulties require the social scaffolding and modelling of their typically-developing, mainstream peers in order to learn and develop the social skills necessary to form friendships. An alternative explanation is that the special needs school group may have been unrepresentative of the group as a whole, experiencing higher levels of behavioural difficulties and autistic symptomatology, thus making it equally hard for them to form peer friendships, despite the

extra structure and support in place.

Another factor to consider is that, alongside this group of children, special needs schools also tend to accommodate other children with more extreme presentations, who may have been unable to attend mainstream school, due to challenging, aggressive or disruptive behaviour. This would mean that, rather than providing an easier context within which to develop peer friendships with other children, the environment of a special needs may, conversely, make this process more difficult. However, since these ideas are only speculative at this stage, further research is needed before any firm conclusions can be drawn about the different social environments provided by mainstream and special needs schools.

Strengths and Limitations of the current study

The multi-informant design of this study enabled me to gain a valuable insight into the real-life experiences of children with an autism spectrum disorder. Moreover, my active involvement in all stages of the research, from conducting the child and parent interviews to transcribing and scoring the videotaped material, allowed me to gain a sense of familiarity with the range of experiences described, contributing to my understanding of the difficulties faced by this group.

Whilst the design of the study meant that the peer relationship information gathered was restricted to that collected at the time of diagnostic interview, there were a number of advantages to this approach. Firstly, both of the interview measures used were standardized, well-validated instruments, with clearly defined sections devoted to exploring children's peer relationships. This meant that information could be extracted directly for use in the current study. Moreover, since all of the data had been collected prior to the development of

particular research predictions or hypotheses, and with no particular expectations with regard to outcome, the study design ensured that the collection of data was in no way biased by my own beliefs and hypotheses regarding the friendship and bullying experiences of these children.

Another strength of the study design was the format of the child interview, which was such that there was an opportunity for the interviewer and child to establish a rapport, so that the questions asked were experienced as conversational, rather than interrogative. In this way, children had frequently begun to talk about their friendships, or conversely their difficulties with peers, at earlier points in the interview, allowing me to gain a more general sense of the quality of their peer relationships before they were asked about these things more specifically. For example, it was obvious from one child's report of having spent the previous weekend playing football and computer games at his friend's house, that he had experience of peer friendship. Similarly, when reporting what made another child sad at an earlier point in the interview, he responded by describing his experience of teasing and bullying by children in his class, bringing his experience to life, and helping to inform my judgement of his overall bullying experience.

Another advantage to this approach was that, in the case of both parent and child interviews, the process of talking about the child's peer relationships provided an outlet for the expression of concern, and, in a number of cases, allowed the child to confide in an adult outside of their immediate environment about difficult experiences, sometimes for the first time. The flexible nature of the interview meant that time could be taken to listen to each child's experience, offering support and empathy, and where appropriate, suggesting strategies for seeking support. Similarly, parents were offered advice and information about

linking in with local child services, to provide ongoing support in relation to their concerns for their child's social development.

One of the challenges of conducting this study was in considering the way in which the information from the various child, parent and teacher measures could be used to provide the most valuable insight into children's peer relationships. Reporting children's friendship and bullying experiences in the form of scores was informative, in that it highlighted the range of different experiences, as well as allowing comparisons to be made between children. However, this quantitative approach inevitably meant that some of the rich and varied description given by children was lost. A mixed methodology design may have been a useful way of incorporating both the strengths of a measurement scale, whilst allowing for the qualitative exploration and description of common themes amongst the experiences of this group of children.

Future Directions

The process of conducting this study has enabled me to develop a greater appreciation of the range of difficulties experienced by children with an autism spectrum disorder in forming and sustaining peer relationships. Whilst, in the majority of cases, children had experienced some degree of friendship with their school peers, few had been able to describe peer relationships suggestive of close, reciprocal best friend relationships. Moreover, alongside their difficulties with friendships, a large proportion of children had experienced some form of teasing, bullying or social exclusion at school.

The study findings clearly demonstrate the important role played by social interaction skills in the ongoing social difficulties which these children experience, and point to the need for further research and ongoing clinical work to address these issues, both on an individual and

wider level. In recent years, a number of different approaches have been developed, including social skills training, and Social stories (Gray, 2002), which help children with an autism spectrum disorder to develop an understanding of social cues, as well as relieving some of the anxiety of novel social situations by providing structure and guidelines for expected behaviour.

Similarly, a number of school-based interventions have been developed, to encourage the involvement of school staff and other children in supporting children with autism spectrum difficulties during the school day. Both the 'Circle of friends' scheme and use of peer mentors or 'buddies' aim to directly involve other children in integrating the child with ASD into their immediate peer group, whilst also helping to improve their social skills and understanding through modelling of social behaviour.

It is hoped that, with an increasing awareness and understanding of the difficulties experienced by children and young people with an autism spectrum disorder, these approaches may be more widely implemented. Whilst further research will enable us to continue to develop more effective ways of working with this group, to support the formation and maintenance of friendship, and promote greater acceptance within schools and the wider community.

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Appendix 1

**Executive****South East****Department of
Health****40 Eastbourne****Terrace****London W2 3QR****Tel 020 7725 2500****Fax 020 7258 3908**

Please reply to: Professor J M Ritter, Chairman of the MREC
Department of Clinical Pharmacology
St Thomas' Hospital, Lambeth Palace Road
LONDON SE1 7EH

Enquiries to: MREC Administrator
Jane Martin Tel: 01227 831662
E-mail:

Dr G Baird
Consultant Paediatrician
Newcomen Centre
Guy's Hospital
London SE1 9RT

25 July 2000

Dear Dr Baird

**MREC 00/1/50 An epidemiological study of Autism: Prevalence and
associated risk factors**

Application form dated 04 07 00

Protocol

Subject consent form version 1

Patient Information Leaflet version 3

Autism screener questionnaire (ASQ(G))

Invitation letter to parents – version 1

Letter to parents regarding visit – version 1

Statement regarding compensation arrangements

Dr Gillian Baird's C.V.

The Chairman of the South Thames MREC has considered the amendments submitted in response to the Committee's earlier review of your application on 14th June 2000 as set out in our letter dated 20th June 2000.

The Chairman, acting under delegated authority, is satisfied that these accord with the decision of the Committee and has agreed that there is no objection on ethical grounds to the proposed study. I am, therefore, happy to give you our approval on the understanding that you will follow the conditions of approval set out below. A full record of the review undertaken by the MREC is contained in the attached MREC Response Form. The project must be started within three years of the date on which MREC approval is given.



INVESTOR IN PEOPLE

Conditions of Approval

- No research subject is to be admitted into the trial until agreement has been obtained from the appropriate local research ethics committees.
- You must follow the protocol agreed and any changes to the protocol will require prior MREC approval.
- If projects are approved before funding is received, the MREC must see, and approve, any major changes made by the funding body. The MREC would expect to see a copy of the final questionnaire before it is used.
- You must promptly inform the MREC and appropriate LRECs of:
 - (i) deviations from or changes to the protocol which are made to eliminate immediate hazards to the research subjects;
 - (ii) any changes that increase the risk to subjects and/or affect significantly the conduct of the research;
 - (iii) all adverse drug reactions that are both serious and unexpected;
 - (iv) new information that may affect adversely the safety of the subjects or the conduct of the trial.
- You must complete and return to the MREC the annual review form that will be sent to you once a year, and the final report form when your research is completed.

You will no doubt realise that whilst the MREC has given approval for the study on ethical grounds, it is still necessary for you to obtain management approval from the relevant Clinical Directors and/or Chief Executive of the Trusts (or Health Boards/HAs) in which the work will be done.

Local Submissions

It is your responsibility to ensure that any local researcher seeks the approval of the relevant LREC before starting their research. To do this you should submit the appropriate number of copies of the following to the relevant LRECs:

- this letter
- the MREC Application Form (including copies of any questionnaires)
- the attached MREC response form
- Annex D of the Application Form
- one copy of the protocol
- the final approved version of the Patient Information Sheet and Consent Form

It is important to check with the respective LRECs the precise numbers of copies required as this will vary and failure to supply sufficient copies could lead to a delay. In addition,

you should submit to LRECs only the revised paperwork reflecting the requirements of the MREC as referenced in the response form.

Local Sites

Whilst the MREC would like as much information as possible about local sites at the time you apply for ethical approval it is understood that this is not always possible. You are asked, however, to send details of local sites as soon as a researcher has been recruited. This is essential to enable the MREC to monitor the research it approves.

ICH GCP Compliance

The MRECs are fully compliant with the International Conference on Harmonisation/Good Clinical Practice (ICH GCP) Guidelines for the Conduct of Trials Involving the Participation of Human Subjects as they relate to the responsibilities, composition, function, operations and records of an Independent Ethics Committee/Independent Review Board. To this end it undertakes to adhere as far as is consistent with its Constitution, to the relevant clauses of the ICH Harmonised Tripartite Guideline for Good Clinical Practice, adopted by the Commission of the European Union on 17 January 1997. The Standing Orders and a Statement of Compliance were included on the computer disk containing the guidelines and application form and are available on request or on the Internet at <http://dSPACE.dial.pipex.com/mrec>.

Yours sincerely

PROFESSOR J M RITTER
CHAIRMAN, SOUTH THAMES MREC

Enclosures MREC Response Form dated 25/07/00

Appendix 2

INFORMATION ABOUT YOUR APPOINTMENT AT GUY'S

Before the appointment:

- We would be very grateful if you could complete the enclosed questionnaires and bring them with you.
- The night before the appointment please put the ice packs in the freezer to chill.
- On the morning of the appointment we would be very grateful if your child's first urine sample could be collected in the small bottle we sent you. Please place this in the jiffy bag with the ice pack and bring it with you to Guy's.

Your day at Guy's:

- Parents will spend the day talking to a member of the team about their child's early history, communication and development. Some parents have found it useful to bring old baby books with them to help them remember what their child was like as a very young child. We will also be asking what your child was like at age 4-5, so it might be useful to look at old photographs of your child at around this age before you come.
- The children will spend the day doing games and puzzles. At some point, a doctor will also do a blood test and a brief physical examination. The blood test shouldn't hurt as we use special cream (Emla) to numb the area beforehand.
- All of this should take no longer than 4 hours.
- The study will reimburse any travel or lunch expenses so please hold onto any receipts during the day.

Thank you very much for your participation and we look forward to meeting with you.

Appendix 3

The Guy's South Thames Development and Communication Study

Newcomen Centre
Guy's Hospital
St. Thomas Street
London SE1 9RT
Tel: 020 7378 3228
Fax: 020 7378 3243

Consent Form

I have read the information about the Social Development and Communication project and discussed the project with the research team.

I give consent for _____ to take part in this study.

I understand that I may withdraw _____ from the study at any time without explanation. Withdrawal from the study will not affect any treatment or service provision received by my child either currently or in the future.

I understand that all the information collected will be confidential to the research team in so far as the law allows (according to the Children Act 1989).

I consent to the taking of blood and urine samples. I understand that a small sample of blood will be stored for the purpose of further testing in the light of scientific advance which will avoid further collection of samples but that further analysis will not be undertaken without my permission.

I understand that part of the assessment involves video recording my child in a play-based interaction with one of the research team and I consent to this recording for the purposes of research and with the safeguards of secure storage and access by the research team only.

I understand that I will be given a summary report on my child to use as I wish. Copies of this report will also be sent to my child's GP and the Consultant Community Paediatrician for our health district.

Name of parent/legal guardian _____

Signature of parent/legal guardian _____

Date _____

I confirm that I have discussed the study and am satisfied that

_____ understands what is involved by taking part in the project.

Name of Researcher _____

Signature of Researcher _____

Date _____

Appendix 4

Name of Participant: _____ Date of Testing: _____

10. Social Difficulties and Annoyance

Focus of Observations: The focus is on the participant's perception of social difficulties, insight into the nature of these problems and whether he has made any attempt to change his own behavior in order to fit in with others more smoothly. In addition, attention should be paid to the participant's insight into the appropriateness and implications of his feelings. In addition, attention should be paid to the participant's awareness that others may be annoyed by his behavior and whether he reports attempts to change his actions in order to minimize such reactions.

Interview Questions:

- Have you ever had problems getting along with people at school or work?
- Are there things that other people do that irritate or annoy you? What are they?
- Were you ever teased or bullied? Why, do you think?
- What about things you do that annoy others?
- Did you ever try to change these things? Did you ever do anything so that others wouldn't tease you? Did it work?

11. Break

Focus of the Observations: The focus is on several factors: how the participant occupies himself during free time, how the participant responds to the examiner's withdrawal from the interaction, and whether and, if so, how the participant initiates and participates in an unstructured conversation with the examiner.

Name of Participant: _____ Date of Testing: _____

12. Friends, Loneliness and Marriage

Focus of Observations: The focus of this item is not on whether the participant has friends, but how he understands the concept of friendship and/or marriage and the nature of these relationships, and how he sees his own role in these relationships. The questions about loneliness address whether the participant understands the concept of loneliness and how he feels it pertains to him. The focus of the questions on marriage/long-term relationships on the participant's understanding of why a person might want to be part of a long-term relationship and his understanding of his own possible role in such a relationship.

Interview Questions:

Do you have some friends? Can you tell me about them? (Note ages. It can be helpful to ask for names if the participant is very general about who they are.)

- What do you like doing together? How did you get to know them? How often do you get together?
- What does being a friend mean to you?
- What is different about a friend than someone whom you just work with or go to school with?
- Do you ever feel lonely? Do you think other (young) people in your circumstances ever feel lonely?
- Are there things that you do to help yourself feel better?
- Do you have a girl/boyfriend? What is her/his name? How old is she/he?
- When did you see him/her last?
- What is he/she like? What do you like to do together?
- How do you know she/he is your girlfriend/boyfriend?
- Do you ever think about having a long term relationship or getting married (when you are older)?
- Why do you think some people get married when they grow up?
- What would be nice about it? What might be difficult about being married?

13. Creating a Story

Focus of Observations: The focus of this item is on the participant's creative use of objects in telling a novel story or creating a newscast or commercial.

Appendix 5

Child Report Friendship Scale

Score	Friendship Description
0	Child is unable to identify / name any friends or confidantes within or outside of school.
1	Child is able to talk generally about a friendship group at school to which he/she affiliates themselves. However, it is clear from the child's description that their relationships are lacking reciprocity / mutuality. The child is not seen by his or her peers as a true 'member' of the group, but will join in with some limited group activities. The child's contact with these children is limited to school hours. The child may talk generally about their understanding of friendship, rather than referring to their own friendship relationships. Their description of friendship reveals a lack of emotional depth or mutuality.
2	Child is able to name or talk generally about some children within their year group with whom they share an interest, or who share membership of a team or club. The friendship may be context-specific, not extending beyond the remit of the team or club, and with the child seeing these children in school only. However, within this context, the child may experience their peers as friends. There may be a sense from the description that the relationship is not equal, with one child making an effort to include the target child in activities, but without the mutuality or shared understanding that might be expected of reciprocal age-appropriate friendship. The child shows a limited understanding of the importance of the emotional aspects of friendship.
3	Child talks more specifically about one or more children at school with whom they share play and other activities. The relationship may be reciprocal, but there is a sense that the friendship is limited in terms of context and amount/quality of shared activities. The child may show some insight into the purpose and function of friendship, but not necessarily relating this information to themselves, or their own friendships.
4	Child is able to name a small group of good friends with whom they engage in reciprocal play or activities during school. They may also see friends outside of school from time to time. The child is an equal member of the friendship group, and takes part in several different age-appropriate play activities with their friendship group. The child is able to show insight into the nature of his / her own friendships, and comment on the emotional as well as practical or proximal aspects of friendship.
5	Child is easily able to name or identify a best friend or confidante. The child sees their best friend regularly both in and out of school, engaging in a range of reciprocal play-based activities where he / she is an equal participant. The child is able to show insight into the nature of his / her own friendships, and comment on the emotional as well as practical or proximal aspects of friendship.

Child Report Bullying Scale

Score	Bullying Description
0	No bullying or conflict reported
1	Minor disagreements and verbal conflict with friends, seen as part of a friendship. Conflicts usually quickly resolved, with minimal damage to relationships
2	Frequent conflict and animosity, but within the context of a friendship group. Alternatively, child may report isolated aggressive incidents aimed at others by a child at school, which have involved them, without expressly being directed at the index child. This score may include reciprocal conflict, in which there is a sense that the index child plays a mutual role in provoking aggression, and in turn faces aggression from other children
3	Child reports one of mild teasing or name calling over a limited time, for example when they began to attend a new school. They may report feeling excluded or not wanted by their same-age peers, or that other children are trying to exclude them through imposing different rules in games, which they do not understand.
4	Child reports more than one of: physical or verbal bullying or teasing on an occasional basis at present, or in the past. The child may feel consistently picked on by a particular child or group of children at school.
5	Child reports currently experiencing frequent, regular victimisation and bullying in the form of verbal teasing, physical aggression or a combination of the two, deliberately directed towards them. Child reports considerable distress or upset as a result of these incidents.

Appendix 6

Extracts from Child Transcripts

Example 1 Friendship Score of 4

I: Have you ever had problems getting along with people at school?

C: Sometimes, but not usually. My friend R goes all...our friendship goes all the way back to class two.

I: Oh gosh, that's a long time.

C: Yeah, we've been friends since the beginning, because I started class one in the beginning in my old place, and then I didn't like it so I moved to (school name)...and we became friends when I came to (school name).

I: What do you like doing?

C: Well, we like talking about games...we're both interested in that, and we both enjoy playing fighting games in the playground. We do pretend kicks and punches at each other. We don't really do it, but some people keep saying 'Why do you keep beating your friend up?'. But I never do.

I: Do you see your friends outside school?

C: Yeah, sometimes. Sometimes..once I went to his house. He has a Playstation 2..he used to have a Playstation 1

I: What does being a friend mean to you?

C: Er..well. It means I can share things with him and sometimes I can go to him for advice...things like that. We've got quite a few things in common.

Scoring: Child describes a long-term friendship with another boy at school. He reports sharing activities with his friend (e.g. talking, play-fighting and playing computer games). He also sees this child outside school from time to time, but the sense is that this is not a regular occurrence. He shows some understanding of the reciprocal nature of friendship, but does not give quite enough detail to gain a score of five.

Example 2 Friendship Score of 1

I: Have you got some friends?

C: Erm...no.

I: Any special friends who live near you at home?

C: No

I: Are there children who you play with in the playground?

C: Yeah...(names three boys at school)

I: What do you like doing together?

C: Sometimes they let me come and play...they play 'It'.

I: Do they ever come to your home?

C: No

Scoring: Child is initially unable to identify any friends, either within or outside of school. Further prompting reveals that the child does occasionally play with several other children at school, but the sense is that this is not a reciprocal relationship, or one which extends beyond the context of playing 'It' during break times. For this reason, the child was given a friendship score of 1.

Example 3 Bullying Score of 3

I: So have you ever had problems getting along with people at school?

C: Yeah...

I: Yeah? What kind of things?

C: I usually get teased...some people, some people that tease me

I: Mmm...why do you think?

C: Because everybody thinks I'm stupid

Scoring: When asked about difficulties at school, the child reports being verbally teased by children at school, on an ongoing basis. He attributes this teasing to the fact that “everybody thinks I’m stupid”, giving the sense that he feels different, and inferior to his peers. For this reason, this child was given a bullying score of three.

Example 4 Bullying Score of 5

I: Do you ever have any problems getting on with people at school?

C: Yeah

I: You do? Ok, can you tell me about that?

C: Well, sometimes people in my class don’t listen to me, and when I speak to them they just immediately they start a conversation with someone else without even listening(...)

I: Ok, do other people do anything else that irritates or annoys you?

C: Push me away when I try to speak to them...just push me away

I: Right, ok. Have you ever been teased or bullied?

C: Yeah, they..erm, there’s a boy in my class and he’s never stopped bullying me. He just bullies me the whole time, saying that I am (spells M-E-N-T-A-L) (....) The bully just told..erm, another boy in my class to hold my arms behind my back, and he did, and then he had..erm, there was another bully in the class, and his name is T, and he was saying “punch him, punch him! Kick him, kick him!” to K...

Scoring: When prompted, this child reports several forms of peer victimization in the form of ignoring and social exclusion, being teased and called names, as well as being the target of serious physical aggression by his peers at school. The severity and ongoing nature of this child’s bullying experience was felt to warrant a score of five.

Appendix 7

SOCIAL DEVELOPMENT AND PLAY (continued)**64. GROUP PLAY WITH PEERS**

(FOR SUBJECTS AGED 10.0 YEARS OR OLDER, PROBE FOR THE 4.0-5.0 YEAR PERIOD. THE FOCUS IS ON THE SUBJECT'S PARTICIPATION IN GROUPS OF OTHER CHILDREN IN SPONTANEOUS GAMES OR ACTIVITIES. CO-OPERATION MUST INVOLVE THE SUBJECT ATTENDING TO HER/HIS PEERS AND MODIFYING HER/HIS BEHAVIOR IN A WAY THAT CLEARLY DEMONSTRATES SPONTANEOUS, FLEXIBLE, INTERACTIVE PLAY. CHASING AND BALL GAMES SHOULD BE INCLUDED ONLY IF SPONTANEOUS, FLEXIBLE AND INTERACTIVE. NOTE PREVIOUS COMMENTS REGARDING CARE IN INTERPRETING PLAY WITH SIBLINGS.)

How does [subject] play with other children/subjects of her/his own age when there are more than two together? What is their play like?

Is [subject] different with children or others outside your immediate family?

Does [subject] play cooperatively in games that need some form of joining in - such as musical games or hide and seek or ball games? (GIVE EXAMPLES AS APPROPRIATE FOR MENTAL AGE LEVEL).

Would s/he initiate such games? Or actively seek to join in?

Can s/he take different parts in these games (like being chased or doing the chasing or hiding and looking for the other person)?

What about when [subject] was 4 to 5?

- | | | | |
|-----|---|-------------------------------|--------------------------|
| 0 = | actively seeks and plays cooperatively in several different groups (3 or more subjects) in a variety of activities or situations | CURRENT
(under 10.0) | <input type="checkbox"/> |
| 1 = | some cooperative play, but of insufficient initiative, flexibility, frequency and/or variety to score '0' | | |
| 2 = | enjoys 'parallel' active play (such as jumping in turn on a trampoline or falling down together during Ring-Around-the-Rose), but little or no cooperative play | MOST
ABNORMAL
4.0 - 5.0 | <input type="checkbox"/> |
| 3 = | no play that involves participation in groups of other children, though may chase or play catch | | |
| 8 = | N/A | | |
| 9 = | N/K or not asked | | |

SOCIAL DEVELOPMENT AND PLAY (continued)**65. FRIENDSHIPS**

(SUBJECTS AGED 5.0 YEARS AND OLDER. FOR THE PURPOSE OF THIS ITEM, FRIENDSHIP IS DEFINED AS A SELECTIVE, RECIPROCAL RELATIONSHIP BETWEEN TWO PERSONS OF APPROXIMATELY THE SAME AGE WHO SEEK EACH OTHER'S COMPANY AND SHARE ACTIVITIES AND INTERESTS.)

Does s/he have any particular friends or a best friend?
In what way does s/he show that they are her/his friends?

Do you know the names of any of her/his friends?

Does s/he see any of them outside of school, like around the neighborhood or in another social setting (e.g. clubs)?

Does s/he ever go out with them such as to the cinema/theatre/concerts? Do they share interests? (PROBE AS APPROPRIATE AND NOTE EXAMPLES)

Are her/his relationships with others normal? (IF NOT), In what way abnormal?
(FOCUS ON SUBJECT'S DEVELOPMENTAL LEVEL - i.e., MENTAL AGE, NOT CHRONOLOGICAL AGE)

Was it the same in the past, or did s/he have fewer/more friends when s/he was younger?

0 = one or more relationships with person in approximately own age group with whom shares non-stereotyped activities of personal variety, seen outside prearranged group (such as club), and with whom there is definite reciprocity and mutual responsiveness

CURRENT
(5.0 or older)

☐

1 = one or more relationships that involve some personal shared activities outside a prearranged situation with some initiative taken by subject, but limited in terms of restricted interests (e.g. model railways) or less than normal responsiveness/reciprocity

MOST
ABNORMAL
10.0-15.0

☐

2 = people with whom subject has some kind of personal relationship involving seeking of contact, but only in group situation (such as club, Church, etc.) or in place of school or work

3 = no peer relationships that involve selectivity and sharing

8 = N/A because serious lack of opportunity for peer contact or because subject is under age 5 years

9 = N/K or not asked

Appendix 8

SHYNESS WITH PEERS

Sensitive reluctance to approach peers who are little known to the subject.

CONSIDER SOCIAL ANXIETY (PAGE 113)
ESPECIALLY IF SHYNESS IS PRESENT TO THE
EXTENT THAT CONTACT IS ACTIVELY AVOIDED.

**Do you think that X is more shy than other kids?*

In what way?

How shy?

Does that stop him/her from doing anything?

Can you tell me about the last time it did?

SUBJECT IS TEASED/BULLIED

Subject is a particular object of mockery or physical attacks or threats by peers.

**Does X get teased or bullied at all?*

Is that more than other children?

**Are other boys and girls mean to him/her?*

How much?

Tell me about the last time.

Who does it?

Why do they do it?

Why do they pick on X?

What does s/he do about it?

What do you do about it?

Coding rules

SHYNESS WITH PEERS

0 = Absent

2 = Shyness involving definite discomfort on meeting new people with whom child has no special reason to feel such discomfort.

Codes

PAM3101

Intensity

SUBJECT TEASED OR BULLIED

0 = Absent

2 = The child reports being be a particular and preferred object for bullying or teasing. That is, s/he is at least somewhat singled out for this sort of attention.

Number of occurrences in last 3 months

HOME

SCHOOL

ELSEWHERE

PAM4101

Intensity

PAM4F01

Frequency

PAM4F02

PAM4F03

PAM4001

Onset

Definitions and questions

AGE APPROPRIATENESS OF FRIENDS

**Are most of X's friends about X's age?*

Are they mostly younger than X?

Or older?

FREQUENCY OF CONTACT WITH PEERS

**How often does X see friends, outside of school?*

Or other kids s/he knows?

Coding rules

0 = Majority of friends within 2 years of age of child

2 = Majority of friends 2 or more years older than child

3 = Majority of friends 2 or more years younger than child.

Codes

PAL4101
Intensity

3

0 = Sees at least 1 peer outside of school more than once per week.

2 = Sees at least 1 peer outside of school between once per week and once every two weeks.

3 = Sees less than 1 peer outside of school in 2 weeks.

PAL5101
Intensity

3

Definitions and questions

Coding rules

Codes

BEST FRIEND

An intensive, selective, and exclusive or semi-exclusive friendship with another child, in which there is an expectation that the dyad does things together, and in which there is a preferential sharing of confidences. There may be 1 or 2 "best friends" at any one time, but if the friendship involves 3 or more peers this would not ordinarily be included as a "best friend" relationship.

**Does X have a best friend? (NOTE NAME)*

*Does s/he ever come to your house?
Or do X go to his/hers?*

*How long has s/he been X's best friend?
What about X's other friends?
Is that different from X's other friendships?*

Does "X" tell "best friend" things s/he wouldn't tell other people?

IF NO "BEST FRIEND" CURRENTLY, ASK:

Has s/he had a best friend in the past?

CONFIDANT(E)

The presence of a confidante is demonstrated by personal sharing of intimate feelings with one or more other people in a fashion that is selective to that relationship. The sharing may consist of hopes, worries, personal "secrets", ambitions, problems, fantasies, feelings of love or rejection, etc., but the sharing must be private to the relationship and it must involve some self-disclosure. Do not include sibling relationships here.

**Does X talk with anyone about his/her feelings?*

**Has s/he talked to you about worries or problems?*

**Or anyone else in the family?*

Who is that?

**Does s/he share "secrets" with anyone?*

**Does s/he have a friend s/he has talked to about worries or problems?*

BEST FRIEND

0 = Definite best friend in last year

1 = Uncertain (including 3 or more close friendships described as "best")

2 = No best friend in last year

PAL6101
Intensity

☐

CONFIDANT(E) AMONG PEERS

0 = Definite confidant(e) with whom shared feelings in last year

1 = Uncertain (including sharing of feelings to wider non-exclusive group)

2 = No confidant(e)

PAL7101
Intensity

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CONFIDANT(E) IN FAMILY

0 = Definite confidant(e) with whom shared feelings in last year

1 = Uncertain (including sharing of feelings to wider non-exclusive group)

2 = No confidant(e)

PAL8101
Intensity

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OTHER ADULT CONFIDANT(E)

0 = Definite confidant(e) with whom shared feelings in last year

1 = Uncertain (including sharing of feelings to wider non-exclusive group)

2 = No confidant(e)

PAL9101
Intensity

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Appendix 9

Strengths and Difficulties Questionnaire

T 4-16

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please give your answers on the basis of the child's behaviour over the last six months or this school year.

Child's Name

Male/Female

Date of Birth.....

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Restless, overactive, cannot stay still for long	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often complains of headaches, stomach-aches or sickness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Shares readily with other children (treats, toys, pencils etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often has temper tantrums or hot tempers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rather solitary, tends to play alone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally obedient, usually does what adults request	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many worries, often seems worried	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Helpful if someone is hurt, upset or feeling ill	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Constantly fidgeting or squirming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has at least one good friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often fights with other children or bullies them	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often unhappy, down-hearted or tearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally liked by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Easily distracted, concentration wanders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Nervous or clingy in new situations, easily loses confidence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kind to younger children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often lies or cheats	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Picked on or bullied by other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Often volunteers to help others (parents, teachers, other children)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Thinks things out before acting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Steals from home, school or elsewhere	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Gets on better with adults than with other children	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many fears, easily scared	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sees tasks through to the end, good attention span	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side

Overall, do you think that this child has difficulties in one or more of the following areas:
emotions, concentration, behaviour or being able to get on with other people?

No	Yes- minor difficulties	Yes- definite difficulties	Yes- severe difficulties
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If you have answered "Yes", please answer the following questions about these difficulties:

- How long have these difficulties been present?

Less than a month	1-5 months	6-12 months	Over a year
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Do the difficulties upset or distress the child?

Not at all	Only a little	Quite a lot	A great deal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Do the difficulties interfere with the child's everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
PEER RELATIONSHIPS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CLASSROOM LEARNING	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- Do the difficulties put a burden on you or the class as a whole?

Not at all	Only a little	Quite a lot	A great deal
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signature

Date

Class Teacher/Form Tutor/Head of Year/Other (please specify:)

Thank you very much for your help